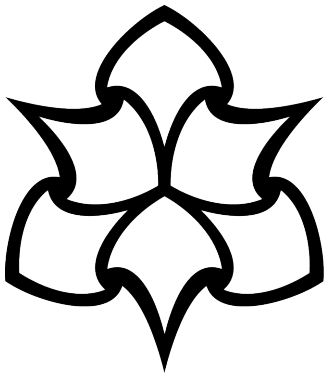


Investigating Visitors' Behavioural Response to Virtual Reality (VR) Retail Environments

Natasha Moorhouse

PhD 2019

Investigating Visitors' Behavioural Response to Virtual Reality (VR) Retail Environments

Natasha Moorhouse

A Thesis submitted in Partial Fulfilment of the Requirements of the Manchester Metropolitan University for the Degree of Doctor of Philosophy

Department of Operations, Technology, Events and Hospitality Management

Faculty of Business and Law

Manchester Metropolitan University

2019

ACKNOWLEDGEMENTS

Thank you to my Director of Studies, Dr Timothy Jung, and supervisor's Dr Mandy tom Dieck and Professor Gary Warnaby for the continuous support and encouragement throughout the three years completing my PhD. Thank you for sharing your knowledge, providing insightful comments and inspiring me to widen my research from various perspectives. Special thanks to Dr Timothy Jung who provided me the opportunity to join the team at the Creative Augmented and Virtual Realities (AR and VR) Hub three years ago. Through this opportunity, I was able to be involved on various AR and VR projects in collaboration with industry and gain invaluable skills, knowledge and confidence to continue my journey as an early-career researcher.

I gratefully acknowledge the full scholarship received from Manchester Metropolitan University, which made it possible to complete my PhD. I am also grateful for the additional funding throughout the three years that enabled me to disseminate my research at both national and international conferences. Without this support, I would not have had the opportunity to travel to great locations around the world.

I would like to thank my family, friends and boyfriend, Brett Turner, for providing advice and encouragement to continue this journey during every obstacle that presented itself. This experience would not have been as enjoyable without being a part of the PhD cohort in the Faculty of Business and Law, so thank you to the students who shared this experience with me.

Finally, I would like to thank all the research participants who kindly participated in this project and for sharing their valuable insights.

DECLARATION

I declare that this thesis has been composed solely by myself and the work has not been submitted, in whole or in part, for any other degree or professional qualification. I confirm that the work submitted is my own.

Natasha Moorhouse

September 2019

ABSTRACT

This thesis aimed to explore the influence of Virtual Reality (VR) retail environment cues on visitors' behavioural intentions in the context of urban shopping destinations. The Stimulus-Organism-Response (S-O-R) theory (Mehrabian and Russell, 1974) were employed as a theoretical foundation given that many researchers have provided substantial evidence on its suitability as a theoretical framework to investigate the effects of various physical and virtual (online/mobile) retail environment cues on human behaviour through the mediating variables of affective and cognitive states. The first step to achieving the aim was to determine the current state of knowledge surrounding this topic. Therefore, relevant literature over four key topic areas was critically reviewed including 1) urban place marketing, particularly within the broader context of urban tourism, 2) retail store environment literature extending to electronic and mobile commerce research, 3) immersive technology, and 4) technology adoption (Objective 1). Then, primary data were collected in two research phases. Research Phase 1 entailed two sets of semi-structured interviews. First, a contrasting case-based approach was employed, and interviews were conducted with seven urban place marketers from three urban place marketing organisations in four urban shopping destinations in the UK (Objective 2). The findings provided initial insights into urban place marketers' views on the perceived barriers, benefits, internal organisational capability and external pressures associated with immersive technology (VR and Augmented Reality) implementation and their overall intention to adopt these innovative technologies for city marketing. This data was analysed using thematic analysis and four themes and eleven sub-themes emerged including three new context-specific sub-themes *(technology access, organisational readiness and industry readiness).*

Based on these findings, twelve semi-structured interviews with visitors to Manchester City Centre were gathered and aimed to draw out context-specific themes and sub-themes. This data was also analysed using thematic analysis and overall, three themes and thirteen sub-themes emerged including four new sub-themes *(virtual aesthetics, virtual atmospherics, social presence and layout design)* under the main theme of VR retail environment cues*.* Accordingly, ten hypotheses were proposed and informed the development of a qualitative VR Visitor Behaviour Model based on S-O-R theory. The aim of Research Phase 2 was to validate the proposed model (Objective 3). To achieve this, survey data were gathered from 150 potential visitors to urban shopping destinations and the data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) (Objective 3). From these findings, a final VR Visitor Behaviour S-O-R Model was proposed, which is the main contribution of this study (Objective 4). The thesis concludes by outlining the theoretical contributions of this research and providing guidance to urban place marketers and VR developers and designers. Finally, avenues for further research based on the identified study limitations are offered.

Key words: Virtual Reality; Visitor Experience; Retail Environment; Stimulus-Organism-Response; Urban Shopping Destinations.

ABBREVIATIONS

VR = Virtual Reality

AR = Augmented Reality

MR = Mixed Reality

VRR Stores = Virtual Reality Retail Stores

VE = Virtual Environment

S-O-R = Stimulus-Organism-Response

WOM = Word-of-mouth

TCM = Town Centre Management

BID = Business Improvement District

ATCM = Association of Town and City Management

DMO = Destination Management Organisation

RSC = Regional Shopping Centres

E-Commerce = Electronic Commerce

M-Commerce = Mobile Commerce

V-Commerce = Virtual Commerce

PAD = Pleasure-Arousal-Dominance

EPI = Emotional Profile Index

AV = Augmented Virtuality

HMD = Head-Mounted Display

eWOM = Electronic Word-of-Mouth

TAM = Technology Acceptance Model

TRA = Theory of Reasoned Action

TPB = Theory of Planned Behaviour

MM = Motivational Model

MPCU = Model of PC Utilisation

SCT = Social Cognitive Theory

DOI = Diffusion of Innovation Theory

UTAUT = Unified Theory of Technology Acceptance and Usage of Technology

SDT = Self-Determination Theory

SEM = Structural Equation Modelling

PLS = Partial Least Squares

PLS-SEM = Partial Least Squares Structural Equation Modelling

ROI = Return on Investment

AVE = Average Variance Extracted

Chapter 1 – Introduction

1.1 Research Background and Justification of the Study

Urban destinations are vibrant epicentres of culture and commerce, and some of the greatest tourism destinations in the world are cities that continue to attract a vast and increasing number of visitors each year (UNWTO, 2014; Bock, 2015). Urban centres are central to tourism activity and often provide a wealth of amenities and attractions located in the innermost parts of the metropolitan area such as major cultural attractions including museums, theatres and art galleries, business districts, shopping districts and urban parks (Henderson, 2017; Griffin and Dimanche, 2017; Shoval and Raveh, 2004; Burtenshaw et al., 1991). For many visitors, the experience of being *in* the city is the main attraction, where the bright lights, the colour and overall atmosphere represents its fundamental appeal (Hayllar et al., 2008). Additionally, many visitors travel to cities for tourism and leisure activities including retailing, which is a key attribute in attracting visitors to urban centres and plays a crucial role in the perceived overall city image (McIntyre, 2012; Rabbiosi, 2011; Findlay and Sparks, 2008). For example, British shops are major draws for international visitors and are included in most holiday visits and especially in Northern cities, shopping is one of the most popular activities that attracts short breaks (Visit Britain, 2013). In support of this, a previous report stated that shopping in general is one of the most popular activities for overseas visitors to Britain and more specifically, shopping centre and town centre shopping were found to be the most popular shopping destinations for overseas visitors to the UK overall (Visit Britain, 2014).

However, cities are faced with great challenges in terms of new economic trends (i.e. the creative economy), demographic transformations (e.g. ageing societies), old and new environmental concerns (e.g. pollution and climate change), and far-reaching implications of new technologies (e.g. digital tools with wide applications in different fields) (Romäo, 2018). Because of current conditions of the globalised economy, the competition for attracting visitors is even greater and city marketing plays a decisive role in this aspect where new and innovative marketing strategies are required to attract and retain visitors (Xu and Zhang, 2016; Deffner and Liouris, 2005). The past 30 years has seen city

marketers turn to place marketing strategies for urban centres aiming to gain a competitive advantage, including in the UK, where there has been a vast increase in the marketing and promotion of urban areas since the 1970's (Henshaw et al., 2016; Warnaby and Medway, 2004). In previous urban place marketing research, there has been a clear emphasis on the creation of visually appealing messages and forms of communication (Ward, 1998; Gold, 1994) and more recently, Marasco et al., (2018) argued that the use of modern technologies is crucial for destinations and their marketing efforts. Therefore, this study acknowledged the important role of retailing in the competitive global positioning of urban centres employing place marketing strategies within the broader urban tourism context. More specifically, although retailing can be strategically utilised in the marketing of city destinations, integrating innovative technologies into these marketing strategies could set urban destinations apart from their global competition.

Indeed, both retail and tourism marketing scholars and practitioners are showing increasing interest in immersive technologies such as Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR). In the retail sector, these technologies present promising tools for producing satisfactory consumer experiences that mirror those experienced in physical stores (Alçaniz et al., 2019). Marketing researchers show interest in these technologies as new electronic commerce (e-commerce) marketing channels with great interactive capacity and innovative contents that have been previously unavailable to marketing scholars and industry (Alçaniz et al., 2019). More specifically, physical retailers are increasingly testing the potential of VR integration into the shopping journey to sustain current market share, seize new opportunities and keep up with the fast pace of technological advances (Bonetti et al., 2018). However, although more brands are using VR technologies to connect with consumers (Clark, 2017), Cowan and Ketron (2019) argued that little is understood about how they should use VR to engage consumers. Therefore, further research is required to determine whether brands should use VR to create relationships or sell offerings, and how brands can facilitate sales or engagement using this technology (Cowan and Ketron, 2019).

In the tourism sphere, the advancement in VR devices are expected to have a revolutionary impact on tourism experiences (Tussyadiah, 2014). Previous studies have

investigated tourists' acceptance of VR (Disztinger et al., 2017; Jung et al., 2015, 2017; Pantano and Corvello, 2014) and its influence on behavioural intentions in different tourism settings (Jung et al., 2016; Pantano and Corvello, 2014; Huang et al., 2013, 2016; Chen and Lin, 2012) with studies emphasising the potential of emotional and imaginative responses to virtual experiences in tourism marketing (Huang et al., 2013). Many of these studies apply an experiential marketing perspective to assess the value and critical factors of VR applications for the marketing of sites and attractions and its impact on behavioural intentions (Marasco et al., 2018; Schmitt, 1999; Williams, 2006). From a managerial point of view, understanding how potential visitors respond to various VR stimuli, the attitudinal consequences of "having visited" a destination is of practical importance to destination managers (Tussyadiah et al., 2018). However, this research area is arguably still in its infancy and empirical studies have not yet sufficiently explored how virtual experiences enabled by Head Mounted Displays (HMDs) can affect individuals' behavioural intentions towards destination sites (Marasco et al., 2018) including shopping areas. Additionally, researchers have suggested that VR's usefulness, enjoyment factor and consumers' intrinsic response towards using VR requires further investigation (Disztinger et al., 2017; Beck and Crié, 2018) and drawing on technology adoption research could provide valuable insights in this aspect.

With an aim to bridge this research gap, this study aimed to investigate the influence of VR retail environment cues on potential visitors' behavioural intentions in the context of urban shopping destinations. Given that the emergence of the experience economy and experiential marketing have brought forth an experiential approach to retailing (Mehrabian and Russell, 1974; Holbrook and Hirschman, 1982; Pine and Gilmore, 1998; Schmitt, 1999; Grewal et al., 2009; Verhoef et al., 2009), this research draws on the conceptual foundations of experiential marketing and retail store environment research in order to determine how these theories apply to the VR retail context, particularly at the wider urban place scale. More specifically, academics and retailers alike have aimed to understand the importance of the physical environment in enhancing the shopping experience for many years (de Nisco and Warnaby, 2013), which is evident by the large stream of research in this area. For example, previous studies have indicated that a wide range of physical retail environment cues relating to store atmosphere (e.g. colour, lighting,

architectural design, music etc.) are important determinants of consumer perceptions and behaviours (Leenders et al., 2019; Jalil et al., 2016; McGoldrick, 2002; Bitner, 1992). Similar studies then begun to emerge focusing on the urban centre and prior research has indicated a positive relationship between urban atmospherics and consumers' emotions (de Nisco and Warnaby, 2014). However, despite the importance of the latter research area, it is evident that there has been much less attention on extending in-store retail environment research to a wider urban context by comparison (de Nisco and Warnaby, 2013), which indicated the need for further exploration on this topic.

The Stimulus-Organism-Response (S-O-R) theory (Mehrabian and Russell, 1974) has formed the theoretical foundation for many studies in this area, and previous scholars (e.g. Kim et al., 2018; Dad et al., 2018; Prashar et al., 2017) have provided substantial evidence on its suitability as a theoretical framework to investigate the effects of various physical and virtual (online/mobile) retail environment cues on human behaviour through the mediating variables of affective and cognitive states. Hence, the S-O-R theory may be a useful framework to explore the factors associated with VR (Kim et al., 2018). However, studies applying the theory to the VR retail, particularly in the urban place context, remain limited to date. Therefore, this research aimed to answer the following research question: What are the effects of VR retail environment cues on visitors behaviour?

Given that extant literature has already pointed to several of these relationships in physical store environments, these relationships might not appear novel when referred to physical environments including at the wider urban scale. However, this study is one of the first to draw on the conceptual foundations of the S-O-R theory to investigate the relationships of specific environment cues (e.g. design, sound, layout and functionality, interactivity and sociability etc.) in a VR retail context. In order to adhere to calls for further research on VR usability outlined above, this study draws on the theoretical foundations of the Technology Acceptance Model (TAM) (Davis, 1989), given that a large stream of research has confirmed its explanatory power in user technology adoption including immersive technologies (e.g. Disztinger et al., 2017; Rese et al., 2017; Huang et al., 2013).

Moreover, this study focused on the wider urban scale (i.e. the city destination) given its prominent role in attracting a wide variety of domestic and international visitors to the specific place for retail purposes. Additionally, it is the role of urban place marketers to integrate novel marketing methods to achieve this aim for urban places. Therefore, it is important to investigate how new digital marketing methods and retail platforms could be integrated into their strategic marketing plan in order for them to achieve this aim. Not only will such research be useful for industry, it will contribute theoretically to several research streams including VR, retail store environment, urban place marketing, S-O-R and technology adoption.

1.2 Research Aim and Objectives

The overall aim of this research was to explore the influence of VR retail environment cues on visitors' behavioural intentions in the context of urban shopping destinations.
In order to fulfil the aim, the following four research objectives were developed:

1. To critically review four research areas including urban place marketing, retail store environment, immersive technology and technology adoption;
2. To investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations;
3. To validate a proposed model portraying the influence of VR retail environment cues on visitors' behaviour in an urban shopping destination context;
4. To propose a new theoretical VR Visitor Behaviour S-O-R Model and provide guidance to urban place/destination marketers.

In order to fulfil the aim, the first required step was to scope the topic areas that could collectively inform this research project. Accordingly, four key areas were explored, including urban place marketing, retail store environment, immersive technology (largely drawing on VR and retail/tourism marketing) and technology adoption (Objective 1). By doing so, it was revealed there is limited research investigating the influence of VR retail environment cues in a specific retail marketing context. Therefore, it was important to

employ an exploratory, qualitative approach in order to assess the applicability of the employed theories in the particular context of this study, and more importantly, to identify context-specific variables and locate these within a conceptual framework to test through subsequent data collection (Objective 2). Validation of the proposed qualitative model using quantitative measures was then required in order to support the validity of the model and generalisability of results (Objective 3). By doing so, a final VR Visitor Behaviour Model based on S-O-R theory was developed, which represented the main contribution of this study (Objective 4). Theoretical contributions and practical implications, specifically for urban place/destination marketers and VR developers and designers are offered in the final chapter.

1.3 Thesis Structure

The thesis is divided into two parts. The first section focuses on the literature review and the second section focuses on the primary data collection and analysis of results. More specifically, the thesis consists of ten chapters and below is a synopsis of each chapter as an overview for the reader.

Chapter 1: Introduction

The aim of the introduction was to provide background and justification to the study and present the research aim and objectives. A justification of why the objectives and employed research methods were required to achieve the study's aim were also presented. The thesis structure is then offered, which provides an overview of each of the ten chapters.

Chapter 2: Urban Place Marketing and Consumer Behaviour

Chapter two aimed to provide context to the thesis by introducing the important role of retailing in the marketing of urban places situated within the broader urban tourism context. The chapter begins by exploring urban place/destination research and classifying the various retail formats in urban shopping destinations. This is followed by a discussion on the extensive retail environment research in-store and shopping centres, while drawing

parallels with the wider urban centre and highlighting the lack of research on the latter by comparison. Research focusing on omnichannel retailing including e-commerce and m-commerce research is also reviewed in order to demonstrate the progression of literature and the focus of research from traditional in-store retailing to multiple virtual retail channels. Importantly, this chapter introduced the S-O-R theory and highlighted how it is a dominant framework within research investigating human's behavioural response to various retail environments.

Chapter 3: Immersive Technologies and Technology Adoption

The purpose of this chapter was to provide an overview of immersive technologies before moving on to discuss VR in more depth, given that it is the focus of this study. Additionally, this chapter aimed to determine the core components of immersive experience that distinguish VR technology from prior 2D marketing channels (e.g. online, mobile etc.), including immersion and presence and increased simulation of multisensory cues. Several applications of S-O-R to the VR context are then provided before the chapter moved on to discuss technology adoption research and related theories. More specifically, the final sections within this chapter highlighted how drawing on a dominant technology adoption theory (i.e. TAM) could help to achieve the aim of this study, which was to explore the influence of VR retail environment cues on visitor's behavioural response in the context of urban shopping destinations.

Chapter 4: Literature Synthesis

The purpose of chapter four was to provide a synthesis of the literature streams that were critically analysed in the previous chapters. By identifying, comparing and contrasting key concepts and themes from the literature findings, this chapter draws conclusions on how the findings address the research aim and objectives and how the common themes and sub-topics informed the empirical aspect of this research. In terms of scoping the literature, the previous chapter provided a parallel research by reviewing urban place marketing research followed by traditional, e-commerce and m-commerce retailing research. The aim of this chapter was to refine the specific commonalities and gaps for further research of these prior findings in the context of VR and urban shopping

destinations. The chapter begins with a discussion on S-O-R theory in order to provide a justification for its adoption in this study. Then, the key research streams identified in the previous literature chapter are discussed.

Chapter 5: Methodology

The methodology chapter presents the employed methods for the primary data collected in this research project. This chapter begins by outlining the philosophical positioning of this research and this is followed by outlining the research methods. This chapter aimed to provide an in-depth discussion and justification of the approaches taken in each of the research phases. Overall, the primary data collection was conducted in two research phases. First, interviews with urban place marketers in the UK were gathered and this was followed by interviews with visitors to an urban shopping destination in the UK (Research Phase 1). Then, quantitative survey data were collected with potential visitors to urban shopping destinations (Research Phase 2). The data collection process for each research phase is outlined including the instrument design, population, sampling method and analysis technique. The final sections present the reliability and validity, limitations and ethical issues associated with aspects of the employed research design.

Chapter 6: Urban Place Marketers' Interview Analysis

Chapter six presents the qualitative analysis of the interviews conducted with urban place marketers in three urban shopping destinations (Manchester, Liverpool and Chester). The interviews aimed to provide insights into urban place marketers' views on the opportunities and barriers of using immersive technologies (AR and VR) to market urban places and their future intention to adopt these innovative technologies. This part of data collection was one of two parts of Research Phase 1 of the data collection and contributed to achieving objective two, which was to investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations. Specifically, this interview data helped to inform the second part of Research Phase 1 by indicating that VR could be the most useful immersive technology for urban place marketers. From here, this study's focus was on VR as opposed to remaining focused on both AR and VR. This chapter begins with an introduction to the interview analysis and each section following this discussed the new and existing themes and sub-themes that emerged from

the analysis. The chapter is then summarised indicating how the findings were used to guide the next stage of data collection, which included interviews with visitors to a UK urban shopping destination (Manchester).

Chapter 7: Visitor Interview Data Analysis

Chapter seven presents the qualitative analysis of the interviews conducted with visitors to urban shopping destinations. The interviews contributed to achieving objective two, which was to investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations. During this stage of data collection, participants experienced two VR retail applications followed by a one-to-one interview. The interviews aimed to draw on participants' affective and cognitive response to the virtual retail environments in order to determine the influence of specific VR retail environment cues on visitors' behavioural intentions and to draw out emergent, context-specific themes and sub-themes. The chapter begins with an introduction to the visitor interview analysis and highlights the new and existing themes and sub-themes before moving on to discuss the findings. From the qualitative findings, hypotheses were developed, which are outlined at the end of each subsection throughout this chapter. The hypotheses informed the development of the qualitative VR Visitor Behaviour S-O-R Model and the data provided a foundation for developing the survey. The hypotheses were tested in the second, quantitative research phase in order to validate the proposed model.

Chapter 8: Quantitative Data Analysis

Chapter eight presents the analysis of the quantitative data. The chapter begins with an overview of the analysis techniques employed. Then, the descriptive analysis and demographic profile of survey respondents are presented followed by the findings from the analysis of the measurement model. The final section presents the structural model analysis including how the VR Visitor Behaviour S-O-R Model was generated using PLS-SEM.

Chapter 9: Discussion

The aim of this chapter was to present the primary and secondary data synthesis and present the new findings that have emerged from the primary data collection. Therefore, the findings from the industry interviews and visitor interviews were synthesised with the survey findings and prior literature in order to provide justifications for the final VR Visitor Behaviour S-O-R Model proposed in the context of urban shopping destinations. The key findings are presented in accordance to the main constructs of the proposed model and each subsection discusses the results of the proposed hypotheses and the direct and indirect relationships between constructs.

Chapter 10: Conclusion

The final chapter begins by reviewing how the aim and objectives were achieved. This is followed by a discussion of the contributions to knowledge and practical implications for urban place/destination marketers and VR developers and designers. Finally, the limitations of this study and recommendations for both future research and urban place marketing practice are offered.

Chapter 2 – Urban Place Marketing and Consumer Behaviour

2.1 Introduction

The following chapter aims to provide context for the thesis by introducing the important role of retailing in urban place marketing. The chapter begins by exploring urban place/destination research and classifying the various retail formats in urban shopping destinations. Experiential marketing is then introduced, and this is followed by a discussion of the extensive retail environment research in-store and shopping centres, while drawing parallels with the wider urban centre and highlighting the lack of research on the latter by comparison. Research focusing on omnichannel retailing including e-commerce and m-commerce research is also reviewed in order to demonstrate the progression of literature and the focus of research from traditional in-store retailing to omnichannel retailing through multiple virtual retail channels. Importantly, this chapter introduced the S-O-R theory and highlighted how it is a dominant framework within research investigating human's behavioural response to various retail environments.

2.1.1 Defining Urban Tourism

Urban tourism is an important, and worldwide, form of tourism, however, in comparison to tourism in other types of destinations, urban tourism has received much less attention from both tourism and city scholars (Horvath, 2018; Ashworth and Page, 2011; Edwards et al., 2008; Ashworth, 2003). Urban tourism destinations have been defined as distinctive geographic areas within a larger urban area that is characterised by a concentration of tourist-related land uses, activities and visitation, with fairly definable boundaries (Hayllar and Griffin, 2005). Accordingly, urban tourism, or city tourism, can be defined as the set of tourist resources or activities located in towns and cities, offered to visitors from elsewhere, and often characterised by non-agricultural based economy (e.g. administration, trade and services), offering a broad range of cultural, architectural, technological, social, and natural experiences and products for both leisure and business (UNWTO, 2018; Shoval and Raveh, 2004). Previously, researchers have argued that an analysis of tourism in world cities remains "noticeable by its absence" (Ashworth and

Page, 2011, p. 5) and still resonates alongside the call for more studies of urban tourism (Maitland and Ritchie, 2007), especially in global cities (Henderson, 2017).

Urban destinations are vibrant epicentres of culture and commerce, and some of the greatest tourism destinations in the world are cities that continue to attract a vast and increasing number of visitors each year (UNWTO, 2014; Bock, 2015). Cities are now home to the majority of the global population, accommodating more than fifty percent of the world population and generate more than 60% gross domestic product (GDP) (UNWTO, 2018; Griffin and Dimanche, 2017). Indeed, cities offer abundant reasons for people to visit and reside, which has led to them becoming highly populated and continuously growing (Lalicic and Önder, 2018; Xu and Zhang, 2016; Edwards et al., 2008; Page and Hall, 2003). Cities often provide a wealth of amenities and attractions located in the innermost parts of the metropolitan area such as major cultural attractions including museums, theatres and art galleries, business districts, shopping districts, and urban parks (Henderson, 2017; Shoval and Raveh, 2004; Burtenshaw et al., 1991). These amenities and attractions may not be specifically designed for tourism purposes and often a significant proportion of users are local residents and commuters (Edwards et al., 2008). Accordingly, the target groups of cities are wide and varied and include residents, companies, tourists and other visitors (van den Berg and Braun, 1999).

2.1.2 Visitors' Changing Behaviour

The city serves these groups in various ways. For residents, the city is a place to live, work and relax and supplies a wide range of facilities such as education and healthcare; for companies, the city is a place to locate, conduct business and recruit employees (van den Berg and Braun, 1999). For tourists and other visitors, it offers a combination of culture, education and entertainment (van den Berg and Braun, 1999). The UNWTO Statistics Guidelines (2010) defined a visitor as, *"someone who is making a visit to a main destination outside his/her usual environment for less than a year for any purpose [including] holidays, leisure and recreation, business, health, education, or other purposes…this scope is much wider than the traditional perception of tourists, which included only those travelling for leisure".* Accordingly, the various types of visitors have

been divided into three categories including tourists, same day visitors, and leisure day visitors (Tourism Society, 2018), which are defined further in Table **2.1**.

Table 2.1. Visitor Categorisation

Visitor Type	Description
Tourist	Visitors saying away from home for one or more nights for any main purpose including holidays, leisure and recreation, business, health, education or other purposes.
Same day visitor	Same day visitors are also known as tourist day visitors and includes those spending at least three hours away from home outside their usual environment for general leisure, recreational and social purposes. Many are local residents of an area.
Leisure day visitor	Those spending less than three hours away from home but outside their usual environment for general leisure, recreational or social purposes. Short stay leisure day visitors should be formally recognised in destination management decisions because they contribute directly to the local visitor economy. The majority of this group are residents of destinations and within the local catchment area.

(Source: Tourism Society, 2018)

In recent years the proliferation of Information and Communication Technologies (ICTs), transportation infrastructure, changing economies and experiential travel have contributed to an increasing demand for urban tourism, a change in visitor behaviour, and, moreover, are transforming the nature of travel and the visitor experience (Lalicic and Önder, 2018; Bock, 2015; Ben-Dalia et al., 2013; Kolb, 2006). More specifically, the increase in urban attractiveness around the globe can be explained by several factors such as increase in urban tourism destinations (Law, 1996; Alegre and Juaneda, 2006), urbanisation (i.e. increase in people living in towns and cities) (UNWTO, 2014), increase in low cost carriers and number of people taking several trips per year (Falk and Katz-Gerro, 2017; Bock, 2015) and the increase of the internet (Bock, 2015). In support of this, prior research indicated that the increasing demand for urban tourism has been offset by the large variety of possible destinations, which has resulted in increasing competition between cities (Law, 1996; Alegre and Juaneda, 2006). Urbanisation is believed to reinforce the trend towards urban tourism, as people living in cities are more likely to associate with and visit other cities (UNWTO, 2014). The increase in low cost carriers and

their expanded and improved flight networks has meant that city trips are more affordable and accessible to the masses (Bock, 2015; Falk and Katz-Gerro, 2017).

Complementary to this is the proportion of the population taking several trips per year, which is continuously on the rise, and there is a tendency to take numerous short breaks as opposed to one main holiday per year (Dunne, Flanagan, and Buckley, 2010). The increasing availability of the internet has meant that information can be easily accessed, and trips booked online, which has also greatly facilitated urban tourism (Bock, 2015). Nowadays, it is more common for people to have more flexible working hours that allow for more travel and there is increasing availability for cheaper lodging (e.g. AirBnB) (Falk and Katz-Gerro, 2017). Simply put, the world is becoming more urban with greater diversity in populations living in the same areas, generating increasingly cosmopolitan metropolises whose residents have expanding networks globally (Griffin and Dimanche, 2017).

However, cities are faced with great challenges in terms of new economic trends (i.e. the creative economy), demographic transformations (e.g. ageing societies), old and new environmental concerns (e.g. pollution and climate change), and far-reaching implications of new technologies (e.g. digital tools, with wide applications in different fields) (Romäo, 2018). As a result of current conditions of the globalised economy, the competition for attracting visitors is even greater and city marketing plays a decisive role in this aspect (Xu and Zhang, 2016; Deffner and Liouris, 2005). In response to the multifaceted and intense competition among urban tourism destinations around the globe, cities are forced to integrate new and innovative marketing strategies to attract and retain visitors (Xu and Zhang, 2016; Metaxas, 2010; Daskapoulou and Petrou, 2009; Kotler et al., 1999). It is also argued that plans to develop local attractions, activities, and infrastructure elements must be incorporated into a city's urban tourism strategy in order to establish a competitive advantage and sustain long-term tourism growth (Xu and Zhang, 2016). Additionally, tourism researchers and professionals must study urban tourism and attempt to understand and internalise visitors' needs and perceptions (Ben-Dalia et al., 2013).

2.1.3 Trends in Urban Tourism Research

Although research interest in urban tourism has increased in recent years, it remains comparatively limited given its size and significance (Griffin and Dimanche, 2017; Ashworth and Page 2011; Ashworth, 2003; Selby, 2004; Page and Hall, 2003). Previous urban tourism studies focused on visitor activity within a specific destination (Shaw and Williams, 1994), urban renewal or revitalisation (Doyle, 2004; Rex and Blair, 2003), and capital cities based on knowledge and creativity (Carrillo, 2004; Daniels and Bryson, 2002; Florida, 2004; Komninos, 2002; Sim et al., 2002; Landry, 2000). In the field of urban studies, research topics include urban tourist destination competitiveness (Daskalopoulou and Petrou, 2009), the economic impact of tourism on urban growth (Ma, Hong, and Zhang, 2015; Law, 1992), and urban tourism planning strategies (Chang, 1997; Law, 1996). Although not a new area of research, Csaba (2005) pointed out an increasing research interest in place branding. However, Merrilees et al., (2009) argued that although urban studies enrich the understanding of city character, there lacks a branding foundation. Nevertheless, several studies have emerged since then focusing on place branding (de Noronha et al., 2017; Zenker et al., 2017) and city branding (Kaya and Marangoz, 2014; Kavaratzis, 2004).

There is also ongoing research in the tourism management literature focusing on urban tourism. In particular, several research areas have received increasing interest including the preferences and behaviours of urban visitors (Shoval and Raveh, 2004; Suh and McAvoy, 2005) and the characteristics of urban destinations (e.g. public image) (Xiang and Pan, 2011). More recently, studies have focused on urban tourism planning and smart cities (Lalicic and Önder, 2018), travel decisions (Falk and Katz-Gerro, 2017), tourism planning and placemaking (Lew, 2017), and place branding (Roult et al., 2016). According to Deffner and Liouris (2005), the nature of cities as tourism destinations is extremely complicated, and a complete study or urban tourism includes the examination of the reasons for visiting a city, the type of visitors, the impact of tourism on the urban environment, management and planning techniques, and an examination of planning and marketing a city as a tourism destination.

2.1.4 Urban Tourism Product

When marketing a city as a tourism destination, marketers must consider the overall tourism product, which can be defined as a complex set of various physical resources, activities, and services that are combined to generate a desirable visitor experience (Ciriković, 2014). The primary tourism products are factors that attract visitors to a particular destination and the diversification, intensification and linkage of these products can be crucial for the competitiveness and sustainable development of specific destinations (Benur and Bramwell, 2015). Effectively marketing the tourism product can be achieved through a specific elements' combination of the traditional marketing mix (4P's = product, place, price, and promotion), which can be defined as the combination of marketing measures needed to achieve the desired strategy (Ciriković, 2014; Kolb, 2006; Ashworth and Voogd, 1990). Within this, place is a set of organisational activities that make products available to consumers and this perspective suggests that consumers obtain value primarily through place location, convenience, and product offerings (Rosenbaum et al., 2017). The extension of the traditional marketing mix and what is commonly known as the services marketing mix (i.e. 7 P's), incorporates people, processes, and physical evidence (Booms and Bitner, 1981). Previously, Smyth (1994) argued that primary tourism products comprise an amalgam of five elements including physical plant (e.g. natural features and weather), the input of services, hospitality, choices for tourists, tourist involvement in the delivery of services, and also experiences. Although there is no consensus definition of a tourism product in the relevant literature, a common understanding is that such a product must appeal to travellers seeking either business or leisure activities (Xu, 2010). Employing a marketing perspective, Xu (2010, p. 608) defined a tourism product as *"whatever aims to cater to tourism needs and is promoted in the marketplace…for tourists, the product is a complete experience that fulfils multiple tourism needs and provides corresponding benefits".*

2.2 Place Marketing

2.2.1 Defining Place Marketing

However, when marketing cities the product also becomes the place, meaning that promotion is vital because potential visitors must be motivated to visit (Kaya and Marangoz, 2014; Ciriković, 2014; Xu, 2010; Kolb, 2006). Hence, there is a recognition

that tourists' experience is of the place and its inherent characteristics (physical, aesthetic, and cultural), rather than simply relating to a tourism product or service that is purchased and consumed (Griffin and Hayllar, 2009). The concept of place is important in the marketing discipline and stereotypically can be defined as a set of organisational activities that make products available to target consumers, which could include channel selection and logistics (Rosenbaum et al., 2017; Armstrong and Kotler, 2015).

In this context, van den Berg and Braun (1999, p.994) stated that an urban place provides a vast number and diversity of products eligible for marketing such as shopping centres, office spaces, but also museums, art festivals or sports events. Urban products are often characterised by lack of flexibility and longevity and can rarely be isolated from their environment (van den Berg and Braun, 1999). In the urban tourism context, researchers (van den Berg et al., 1995) have distinguished between the primary tourist products (e.g. tourist attractions) and the secondary tourist products (e.g. accessibility). Destinations depend on their primary tourism products (e.g. museum) as key pull factors motivating people to visit and tourism product developers and marketers should consider both the tangible and intangible elements of the tourism product (Benur and Bramwell, 2015; Xu, 2010). Accordingly, a primary tourist product will attract more visitors if there are secondary products nearby (e.g. restaurants and shops) (van den Berg et al., 1995).

The concept of place is also studied in the geography literature; where there appears to be various approaches to studying this phenomenon namely, descriptive, social constructionist and phenomenological (Creswell, 2004). More specifically, regional geographers take a descriptive approach to place and consider the world being a set of places, each of which can be studied as a unique and particular entity (Creswell, 2004). While a social constructionist approach to place is interested in these particularities of place, they are only concerned with them as instances of more general underlying social processes (Creswell, 2004). In comparison, humanistic geographers, neo—humanists and phenomenological philosophers (Malpas, 1999; Sack, 1997; Casey, 1998; Tuan, 1974) take a phenomenological approach to place, which seeks to define the essence of human existence as one that is necessarily and importantly "in-place" and are therefore more interested in "Place" than "places" (Creswell, 2004, p.51). Accordingly, Creswell

(2004) argued that the central argument about place in the geography literature and beyond seems to be between those who write of place in terms of individual places including their locations, boundaries and associated meanings and practices (e.g. regional geographers), and those who want to argue for a deeper primal sense of place (e.g. philosophers of place). According to Hayllar et al., (2008), cities are essentially human spaces where visitors and locals *create* places for human interaction – to meet, eat, shop or pass time. Research in the tourism domain (Hayllar and Griffin, 2005; Hayllar and Griffin, 2006, Griffin and Hayllar, 2006) has indicated that a distinctive sense of place is fundamental to the visitor experience.

2.2.2 The Practice of Place Marketing

Place marketing has become an increasingly common strategy over the last 30 years for urban centres aiming to gain a competitive advantage within more competitive spatial environments (Henshaw et al., 2016). Place marketing can be defined as *"the coordinated use of marketing tools supported by a shared customer-oriented philosophy, for creating, communicating, delivering, and exchanging urban offerings that have value for the city's customers and the city's community at large"* (Braun, 2008, p.43). Drawing on a range of definitions, Warnaby et al., (2002) specifically defined urban place marketing to encompass three key dimensions. First, urban place marketing is the responsibility of a range of actors from public, private and voluntary sectors that collaborate in order to implement entrepreneurial activities (Warnaby et al., 2002). Second, urban place marketing is concerned with ascertaining and meeting the needs and expectations of a range of users and potential users of the urban place (Warnaby et al., 2002). Finally, urban place marketing involves the commodification of selected attributes of the urban place in order to promote a positive image of the place as a holistic entity (Warnaby et al., 2002). According to Madsen (1992), place marketing strategies and activities must be directed towards specific place user groups in order to better ensure commercial success. Additionally, it is important that place marketers understand the attractiveness of their place compared with others from a place user's point of view (Skinner, 2008).

Researchers have conceptualised three levels of urban place marketing: (1) individual urban goods and services, (2) clusters of related services, and (3) the urban

agglomeration as a whole. In the first level, marketing is concerned with the marketing of one facility, service or attraction and the marketing strategy is planned and implemented by those responsible for their management (Warnaby et al., 2005; Van den Berg and Braun, 1999). The second category comprises several related individual urban goods and services (e.g. urban tourism and retail facilities) that comprise of the first level elements (Warnaby et al., 2005; Van den Berg and Braun, 1999). The third and final level is concerned with the urban agglomeration as a whole and focuses on identity and image-building, specifically the combination of individual goods, services, and clusters that may be promoted to distinct target segments that associate with the city's image (Warnaby et al., 2005; Van den Berg and Braun, 1999; Ashworth and Voogd, 1990). Warnaby et al., (2005) argued that the entire retail provision within the traditional centres of urban areas could be considered as one of the 'clusters' of related attributes/services. As such, retailing will interact with other place product elements (e.g. facilities, services, attractions etc.) to produce a 'holistic' place product that customers perceive to be greater than the sum in parts (Warnaby et al., 2005).

Although the marketing of urban places has been practiced since the nineteenth century (Ward, 1998), urban places have since found themselves in an increasingly competitive environment and the importance and intensity of this activity has since increased (Warnaby et al., 2002). Nowadays, urban management must be conducted in a more strategic, competitive and market-oriented approach and be able to respond to the trend for increasing competition and interdependence between the cities that derive from the globalised economy (Deffner and Liouris, 2005). Indeed, the marketing of towns and cities is a challenge in terms of creativity and ideas, but it is also an organisational challenge, meaning that cities need to invest more in the human resources than most of them have (van den Berg and Braun, 1999). Cities also need to be competitive at national and international level, which puts high demand on urban management and causes cities and towns to implement marketing as a weapon against competition (van den Berg and Braun, 1999). Furthermore, urban place marketing is considered an element of urban policy (van den Berg and Braun, 1999), and is practised in a range of contexts including geography, architecture (e.g. Najafi and Shariff, 2011; Castello, 2006) and tourism (e.g. Lew, 2017; Smith, 2014).

2.2.3 Place Marketing in a Tourism Context

In the tourism literature, studies have focused on tourism place-making (e.g. Hultman and Hall, 2012), place branding in tourism (e.g. Alexander, Teller, and Wood, 2019; Almeyda-ibáñez and George, 2017), the emotional dimension of rural tourism experiences (e.g. Jepson and Sharpley, 2015), the contribution of the physical environment to sense of place (e.g. Stedman, 2011), sense of place and tourism business development (e.g. Liu and Cheung, 2016) and tourism/destination marketing (e.g. Pike and Ives, 2018; Bramwell and Rawding, 1996). The marketing and management of destinations is also a key field of academic study and an important issue in the tourism industry (Sammy, Robinson, and Oriade, 2017). Destination marketing is an important topic of research in leisure tourism (Wang and Pizam, 2011) and a substantial number of studies have emerged in this area (e.g. Nagai et al., 2018; Sheehan et al., 2016; Torres, 2015).

Central to the marketing of regional tourism is Destination Management Organisations (DMOs), which were initially formed over a century ago to maximise the economic impact of visitors to a specific area (Pouder et al., 2018; McCamley et al., 2012). DMOs can be defined as the organisation responsible for the coordination of the complex tourism industry and command the support for all key sectors and actors in the tourism system (Nagai et al., 2018; Ritchie and Crouch, 2003). Accordingly, the ultimate role of a DMO is to enhance the long-term competitiveness of a destination and in order to develop a competitive advantage and sustainable long-term tourism growth, the city's urban tourism strategy must incorporate plans to develop local attractions, activities, and infrastructure elements (Xu and Zhang, 2016; Cooper et al., 2008). Their marketing activities encompass a wide range of planned events that enhance visitors' experience with the goal of supporting the long-term economic development of communities through increased visitor spending while enhancing the well-being of residents (Pouder et al., 2018; Bornhorst et al., 2010).

However, strategic marketing and management in tourism is complicated due to the complex nature of the tourism industry given that it consists of both public and private sector companies, provides a variety of goods and services, and is quite fragmented (McCamley et al., 2012; Gilmore, 2003). Therefore, marketing management requires the

collaboration of public, private, and local community organisations to work together and generate a management approach in order to implement the right marketing strategy for the destination to remain competitive (Nagai et al., 2018; Torres, 2015; Gilmore and Simmons, 2007). Researchers have argued that DMOs' ability to manage a destination largely influences the destination's sustainability and competitiveness (e.g. Ritchie and Crouch, 2003; Volgger and Pachlaner, 2014).

However, the legitimacy and effectiveness of DMOs in contemporary society has been criticized due to their limited ability to reinvent themselves in response to radical social, technological (including the rapid growth of online media technologies), economic, and political transformations that are occurring in the external environment (Sheehan et al., 2016; Dredge, 2016a, 2016b; Hall and Veer, 2016; Munar, 2016; Reinhold, Laesser, and Beritelli, 2015). Therefore, this presses the need for DMOs to develop a more strategic approach supported by knowledge acquisition and knowledge management capabilities (Sheehan et al., 2016). Indeed, the functional aspects of a tourist destination are no longer sufficient to attract visitors (Hanna and Rowley, 2019), therefore, it is important that DMOs capitalise on and communicate the emotional attributes of their destination, which are key to building relationship between the destination/place and visitors (Hultman et al., 2015). In light of increased global competition, destinations have turned towards branding and marketing strategies (Zavattaro et al., 2015). It has become important for brand managers to have accurate evaluations of their success to better align usually limited resources with practices that can increase tourism to a destination (Jacobsen and Munar, 2012; Zenker and Martin, 2011).

2.2.4 Place Branding

With any brand, the goal is to attract and retain customers to ensure brand and product success (Zavattaro et al., 2015). Kotler and Levy (1969) translated the idea of product marketing into the services realm, noting that places and services are marketed similarly to products. Nowadays, branding is a construct increasingly being applied to regions, nations, retail districts, shopping centres and town centres (De Noronha et al., 2017). This also applies to destinations where destination branding has been defined as a way to communicate a destination's unique identity by differentiating a destination from its

competitors (Morrison and Anderson, 2002). Similarly, place branding is used when referring to the branding of countries, regions, and cities (Caldwell and Freire, 2004) and it has been argued that branding is the natural starting point for the marketing of places (Keller, 1998). Hence, given their similarities, Merrilees et al., (2009) argued that destination branding and place branding are arguably interchangeable terms.

Numerous practitioners and scholars (e.g. Trueman, Cook and Cornelius, 2008; Kotler, Hamlin, Rein, and Haider, 2002; Murphy, Pritchard and Smith, 2000) have agreed that the branding aspect of place marketing is key to leveraging the tangible and intangible characteristics of places in order to attract investment, tourism and potential new residents (Page and Hardyman, 1996). Branding places generally becomes more complicated than branding a product because of the myriad stakeholders involved (e.g. tourists, families, students, large corporations, small businesses, hospitality professionals etc.) (Zavattaro et al., 2015; Kavaratzis and Hatch, 2013; Kavaratzis, 2012; Kemp et al., 2012; Zenker and Martin, 2011; Balakrishnan, 2009; Hankinson, 2005). Often, a lead DMO (e.g. at nation, state or local governmental level, or specific tourism entities) is responsible for creating an overall place brand strategy (Zavattaro et al., 2015; Hanna and Rowley, 2015). The increased marketing by governments and other bodies related to tourism, planning and city management has resulted in more sophisticated application of branding and marketing including social media (Zhou and Wang, 2014). However, varied economic and political standpoints will influence the level of involvement of DMOs within creating branding strategies (Webster, Ivanov, and Illum, 2009).

City branding constitutes a sub-field of place branding and focuses on the marketing and branding of cities to the residents and potential residents as a place to live, to businesses as a place to invest, and visitors a place to visit (Merrilees et al., 2009). City branding has arguably been practiced consciously or unconsciously since cities began competing with one another (Kavaratzis and Ashworth, 2005). Cities develop place branding strategies to survive in global competition, to be valuable and distinctive, and to increase its preferability (Içli and Vural, 2010). Given the multitude of target audiences and city stakeholders (e.g. visitors, residents, public institutes, investors, and non-governmental organisations), it is important that cities consider branding in a wide range of contexts,

and in respect of the strategic management of various stakeholders (Hanna and Rowley, 2015; Kavaratzis, 2004). Kavaratzis (2004) argued that cities resemble corporate brands because they are complex entities that deal with multiple identities, address various stakeholders and have social responsibilities, which means that cities can be promoted in a similar way to brands. Similar to products that are sold under an umbrella brand, various products and services within the city can be marketed (Prilenska, 2012).

2.2.5 The Role of Retailing in Urban Places

Nowadays, urban tourism destinations are using retailing as a central marketing strategy to attract visitors and are therefore positioning themselves as shopping destinations. For instance, a number of destinations in Asia, Europe and the U.S. have already distinguished themselves as shopping destinations (Rabbiosi, 2011). They range from fashion capitals such as Paris, London, and New York (Anttiroiko, 2014), to cities and neighbourhoods characterised by a high density of traditional shops and markets with an ethnic and/or authentic character (e.g. night markets in South-East-Asian cities) (Hsieh and Chang, 2006). There are cities and neighbourhoods characterised by a high density of hypermodern shops (e.g. Dubai) (Henderson, 2006), or fake villages completely devoted to mass consumption and retail (lifestyle centres, retail parks, themed-based outlet centres) (Rabbiosi, 2011). In the UK, there has been a vast increase in the marketing and promotion of urban areas since the 1970's (Warnaby and Medway, 2004) and nowadays, shopping is one of the most popular activities for overseas visitors to Britain (Visit Britain, 2014). Therefore, the term *urban shopping destinations* could be used to classify those city destinations that strive to attract new and existing visitors for shopping purposes and assert the role of retailing in urban place marketing strategies and in the regeneration of the urban economy.

Indeed, retailing in general and shopping centres more specifically, are an important component of the tourism industry, especially when it is intertwined with visiting entertainment facilities (e.g. attractions, facilities) that are an integral component of shopping centres (Williams, 2012; Choi et al., 2016). Developing a shopping centre in a specific area, or a lively shopping area within a town centre, could lead to increased tourism and increased investments and re-developments throughout the area, from local

eateries to major attractions, and therefore create opportunities for regional income and employment (Choi et al., 2016; Harris, 2012; Williams, 2012). Therefore, retail is often used in the promotion of city destinations, for instance, the images offered to promote Paris as a leisure-shopping destination are embedded within the cultural promotion of the city (Rabbiosi, 2011).

2.2.6 The Management of Retail Places in the UK

Place management is the management of places and can be defined as *"a coordinated, area-based, multi-stakeholder approach to improve locations, harnessing the skills, experiences and resources of those in the private, public and voluntary sectors"* (Scaramanga, 2012, p.74). The concept of place management is not new and has evolved considerably over the last four decades (De Noronha et al., 2017). Initially, the focus was on town centres as shopping destinations (Davies and Bennison, 1978) before moving to a much more holistic view of the role of town and city centres (Whyatt, 2004).

In the UK, those responsible for encouraging visitors to travel to the city to shop are DMOs, Town Centre Management Schemes (TCMs), and Business Improvement Districts (BIDs). The Association of Town and City Management (ATCM) is a not-for-profit organisation that represents the interests of the sector including key public and private stakeholders who develop and implement strategies, visions, and action plans for town and city centres throughout the UK and Ireland (Findlay and Sparks, 2008; De Noronha et al., 2017). ATCM defined TCM as *"a co-ordinated pro-active initiative designed to ensure that our town and city centres are desirable and attractive places. In nearly all instances the initiative is a partnership between the public and private sectors and brings together a wide-range of key interests"* (ATCM, 2016).

TCMs began in the 1980s and 1990s (ATCM, 1999) and during this time, TCM schemes focused on providing better town centre environments for retailers and town centre users, while improving the town or cities attractiveness and competitiveness (Findlay and Sparks, 2008). However, according to Warnaby and Medway (2006), the ability of TCM schemes to plan and implement effective marketing activities was arguably compromised by funding discontinuity and the related issues of *free-riding*, which meant that the majority of urban stakeholders were enjoying the benefits arising from TCM activities but

not contributing to them. As such, TCMs and their delivery have evolved considerably over the last decade (De Noronha et al., 2017).

ATCM was a key organisation in facilitating the transition from TCM to Business Improvement Districts (BIDs) (Findlay and Sparks, 2008), which gained increasing interest from the early 1990s in the UK (ATCM, 1997). By the time the legislation to enable BIDs was passed, it was suggested that there were as many as 450 TCM schemes operating in the UK (Hollins, 2004). Cotterill et al., (2019) defined BIDs as, *"business-led partnerships that agree by ballot to pay an extra levy on their business rates based on their rateable value to fund activities, services and improvements that will benefit the businesses and the place in which they operate"*. In short, the additional levy that businesses in a selected area agree to pay is directed towards the improvement of places (Peyroux, Pütz, and Glasze, 2012). BIDs were regarded as a means of overcoming some of the inherent problems arising from the essentially voluntary nature of stakeholder participation in TCMs as previously mentioned (Cotterill et al., 2019). Together with DMOs, BIDs are responsible for the management of retailing in urban shopping destinations. More specifically, the fundamental purpose of BIDs is to improve the attractiveness of a specific geographic location and since BIDs were introduced to the UK in 2004, they have become an important mechanism for place management (Cotterill et al., 2019).

Compared with TCMs, BIDs widened the funding base, required much more engagement with businesses, and offered a fixed period over which to plan and operate (Cotterill et al., 2019). As such, BIDs are wider than retail and incorporate all businesses in the designated area, meaning that projects will not be tailored specifically to retailing as in TCMs (Findlay and Sparks, 2008). However, a report by the Institute of Place Management (IPM) (Cotterill et al., 2019) argued that although BIDs have a wide base, retail is core to this base, and the changes that are happening to town centre retail will impact on the potential funding base for many BIDs and their activities. More specifically, the impact of change in town centres will influence the future development of BIDs and it is those BIDs who are inclusive of all business types and can reach out to other important groups (e.g. residents) that will be more able to manage this change (Cotterill et al., 2019).

Over the last two decades, TCMs and BIDs have attracted much attention from researchers (Forsberg et al., 1999; Hoyt, 2005; Ruffin, 2008; Wells, 1991).

2.2.7 Retail Developments in the UK Context

The complex retail sector comprises a hierarchy of town and city centres with significant variation in terms of both size and catchment, diverse micro-locations within these areas, and a varied and ever-changing range of formats (Hughes and Jackson, 2015). Retail places are manifest in the diversity of retail formats such as large-scale, out-of-town shopping centres, outlet centres, shopping villages and town centres (Alexander and Kent, 2017). Town centre is a term previously used to identify a city, town or traditional suburban centre that provides a broad range of facilities, services, and functions as a focus for both the community and public transport (Department of the Environment, 1993). The primary function of town centres is service provision for a local and non-local population (e.g. commuters and visitors) (Page and Hardyman, 1996). City centres continue to be successful because their size operates as a magnet for shoppers and also because they are attractive to leisure shoppers looking for a day-out experience (Jones and Livingstone, 2018). This is also augmented by multi-channel retailers seeking to use their stores as destinations to showroom their goods (Jones and Livingstone, 2018).

Over decades, town centres have evolved with new shopping centres built and the greater flexibility to consumers offered by this format led to the decline of department stores, which where the traditional anchors of these high street locations (Jones and Orr, 1999). Consumers act differently in various types of shopping centre environments (e.g. enclosed shopping centres, town centre), which means it is important to consider visitors experience in different shopping centre formats independently (Yan and Eckman, 2009). Indeed, shopping centre and town centre shopping is the most popular shopping destination for overseas visitors to the UK (Visit Britain, 2014).

Since the 1990s, planning policies in the UK context have generally sought to concentrate retail development within town centres (Adams and Tiesdell, 2013). A primary motivation for such schemes was to counter the effect of retail decentralisation and protect traditional town centre destinations against the movement of out of town retail developments, which became a direct competitor to retail provision in traditional urban centres from the 1970's

(Cotterill et al., 2019; Warnaby and Medway, 2004). For instance, Regional Shopping Centres (RSCs), which are often located out-of-town or edge-of-town in the UK (Warnaby and Medway, 2004), attempt to provide consumers with the full range of goods and services anticipated in a medium-sized town centre, but all under one roof (Guy, 1998) and are considered the closest to offering a complete alternative to town centre shopping (McGoldrick, 2002). Local and regional tourism bodies in the UK have indicated that RCSs can help raise the tourism profile of an area and are often used in targeted tourism marketing and have been an important factor in attracting international markets (Robertson and Fennell, 2007). For instance, RSCs tend to draw a wider catchment area, which draws a different sort of shopping trip such as a day out or for an occasion, and often such centres are considered more leisurely shopping trips (Robertson and Fennell, 2007).

However, the growth of these centres and in town shopping malls in cities, combined with improved inter-urban motorways has contributed to bringing greater concentration of sales in regional centres (Jones and Livingstone, 2018). In the UK, large RSCs (e.g. The Trafford Centre in Manchester and The Metro Centre in Newcastle) began to be constructed during the 1980s and 1990s supplying visitors with a comprehensive range of high-street names, as well as restaurants, cinemas and free parking, all in one complex (Harris, 2012). At this time, RSCs had a direct negative impact on the footfall in many surrounding high street areas as they attracted many visitors (Harris, 2012; Williams, 2012), and the central focus for retailers began to evolve around achieving differentiation in a growingly competitive market through attractive in-store design (McGoldrick, 2002). In previous years (1998-2010), a large increase in clothing and footwear stores in regional centres has been directly linked with a parallel decline in sub regional and town centres (Genecon, 2011).

As a result, out-of-town shopping centres and retail parks have become to represent damaging threats to town centres (Thomas, Bromley, and Tallon, 2006; Guy, 2000) given that they attract national retailers from the traditional high street and there is an increasing overlap in the goods available for sale (Jones and Livingstone, 2015). Additionally, shopping centres are attractive and appealing to the leisure-tourist-shopper, rather than

the utilitarian shopper (Howard, 2007), meaning that these retailers can enhance the purchasing experience by turning shopping into an event and entertainment (Dennis, Harris, and Sandhu, 2002) and creating a “destination store mind set” (Katros, 2000, p.76). The relative disadvantages of high streets compared with out-of-town shopping includes for example, availability and cost of car parking (Portas, 2011). As such, traditional local shopping centres are being displaced by retail parks and superstores in decentralised locations with easy car access (Jones and Livingstone, 2018).

The concept of retail agglomeration can be used to define *“a group of retail stores in close proximity, which cooperate and compete with each other simultaneously”* (Sanyal and Ghoash, 2017, p.1). Retail agglomerations are an omnipresent feature of the urban environment in both developed and developing nations and are therefore an important element of the urban place product (Whyatt, 2004; Short and Kim, 1998). These store clusters are a reaction to the increasing competition among urban places such as districts, towns and cities (Teller and Reutterer, 2008). They also function as attractors for multiple place user groups such as prospective and existing residents, tourists, visitors, consumers and employees (Shaw and Williams, 1992). Hence, retailers have an influence on the attractiveness of an urban place from the visitor perspective (Warnaby and Davies, 1997). Created agglomerations are the product of an explicit process of planning and design, which could include shopping centres located on the outskirts of towns and cities (Teller and Elms, 2012). Evolved retail agglomerations including shopping streets and other kinds of urban store clusters are an integral part of the urban fabric (Teller and Elms, 2012). Retailers located in urban retail agglomerations can benefit from using infrastructural services (e.g. parking facilities, traffic infrastructure, provision of cash dispensers, public toilets, etc.) that they might not have themselves (Teller and Elms, 2010). Additionally, retailers can benefit from customer streams, which occur naturally within an urban place such as residents, tourists or employees (Teller and Elms, 2012). Indeed, retailers intentionally cooperate in order to gain a larger share of consumer visits to agglomerations within their relevant choice set (Howard, 1997; Teller, 2008).

In town centres, entire creative quarters are identified as important contributors to vibrant and successful places, and have created opportunities for small-scale retail, independent

and often creator-owned shops, accompanied by cafés bars and restaurants, which serve the creative community and through their association with design, they attract a wider market (Alexander and Kent, 2017). Such quarters have created opportunities for small-scale retail, independent and often creator-owned shops, accompanied by cafés bars and restaurants (Alexander and Kent, 2017). They serve the creative community and through their association with design, they attract a wider market (Alexander and Kent, 2017). Town centres must compete with other towns and out-of-town developments that have the same aim to attract visitor income (Harris, 2012). However, retailing in urban places suffers from not being embedded within purpose-built shopping environments (Teller and Elms, 2010) and compared to created retail agglomerations (e.g. shopping centres), an evolved retail agglomeration (i.e. city/town centre) can be more challenging to manage efficiently (Teller, 2008). To market an urban environment, which retail agglomeration is an integral part of, it is crucial to understand a place's characteristics relative to its competitors and to identify the different place user groups that inhabit it (Hospers, 2006). Although many town centres are large, size is not the necessarily the key attraction for visitors, it is about providing something different that catches the public's imagination (Harris, 2012). Revitalising the main streets and historic areas can be used to attract foot traffic for retailers and encourage shoppers to spend money (Kim et al., 2007). These centres attract a critical mass of consumers and provide activities in a distinct environment (Filion et al., 2004).

From a marketing perspective, retailing has become a part of many towns image (Findlay and Sparks, 2008). British shops are major draws for international visitors and are included in most holiday visits and especially in Northern cities, shopping is one of the popular activities that attracts short breaks (Visit Britain, 2013). Additionally, those visiting friends or relatives (VFR), study visitors and business visitors are often likely to participate in easily accessible or sociable activities such as shopping (Visit Britain, 2013).

2.3 Experiential Marketing Urban Shopping Destinations

Moreover, the emergence of the experience economy and experiential marketing have brought forth an experiential approach to retailing (Mehrabian and Russell, 1974; Holbrook and Hirschman, 1982; Pine and Gilmore, 1998; Schmitt, 1999; Grewal et al.,

2009; Verhoef et al., 2009). Following the publication of Pine and Gilmore's (1999) influential paper, *"Welcome to the Experience Economy",* studies have largely focused on various types of experience delivery and experiential marketing. This trend has meant that nowadays consumer expectations are higher than ever as consumers expect a full experience as opposed to solely purchasing goods and services (Kim et al., 2007; Anteblian et al., 2013). In the experience economy, marketers must strategically transform products and services into a full consumption experience that satisfies consumers' emotional and expressive desires, as well as their rational and functional needs (Kim et al., 2007). Therefore, it is critical for marketers to deliver memorable experiences if they are to be profitable (Baron et al., 2009; Pine and Gilmore, 1999, 2011). Because of the increasing focus on creating experiential offerings, the concept of experience has emerged as a research topic in the field of marketing (Anteblian et al., 2013). Initial research in this area focused on antecedents and the search for an experience and on the outcomes of an experience, however, focus has since shifted onto the actual content of an experience (Anteblian et al., 2013).

Experiential marketing is part of this broader notion of the experience economy and situates the consumer experience as its central focus (Pine and Gilmore, 1998; Schmitt, 1999). The concept of experiential marketing has been applied to various areas including retailing, branding, event marketing and tourism and hospitality (Yuan and Wu, 2008). Originally, Holbrook and Hirschman (1982) were the first to introduce the experiential perspective of consumer behaviour and marketing. Experiential marketing can be defined as *"a marketing tactic designed by a business to stage the entire physical environment and the operational processes for customers to experience"* (Yuan and Wu, 2008, p. 388). Accordingly, experiential marketing focuses not only on the product or a service, but the entire experience that a company creates for its customers, hence, the main component of experiential marketing is the experience (Yuan and Wu, 2008).

Previously, Schmitt (1999) proposed an experiential marketing framework that entails five core strategic experiential modules including 1) sensory experiences, 2) affective experiences, 3) cognitive experiences, 4) physical experience, behaviours and lifestyles, and 5) social identity experiences that result from relating to a reference group of culture (Schmitt, 1999). Sensory marketing aims to appeal to the senses through sight, sound, touch, taste and smell, while affective marketing focuses on the stimuli that can trigger emotions (Schmitt, 1999). The objective of cognitive marketing is to engage customers through surprise and intrigue, for example (Schmitt, 1999). Physical experiences, behaviours and lifestyles refers to marketing that shows customers have alternate ways of doing things, and lifestyles and behaviours are often motivational, inspirational and emotional in nature while frequently involving role models (Schmitt, 1999). The fifth module contains aspects of the other four core modules, however, it expands beyond the individual's personal, private feelings and relates the individual to a broader social system, their desire for self-improvement and being perceived positively by others (Schmitt, 1999). Ideally, marketers should strive to strategically integrate all five core modules at one time through experience providers (e.g. communications, visuals and verbal identity, product presence, spatial environments, electronic media and people) (Schmitt, 1999).

In the tourism sphere, entire tourist destinations are positioned as the experience itself; hence, experiences are an important part of the attractiveness of a tourist destination (Rusko, 2014; Richards, 2001). As tourism is concerned with seeing, visiting, learning, enjoying and living (Stamboulis and Skayannis, 2003), everything that occurs at a destination can be an experience, whether that is behavioural, perceptual, cognitive, emotional, expressed, or implied (Oh et al., 2007). Due to the experiential shift, making a retail concept work today is more about the intangibles that colour and flavour the shoppers experience in the retail environment as opposed to the tangible aspects of the business (Sachdeva and Goel, 2015). The goal of experiential store design is to use a variety of emotional and cognitive stimuli to create a unique shopping experience for each customer (Sachdeva and Goel, 2015). Retail environment cues such as lighting, sound and smell influence consumers' impulse decisions (Morrell, 2012). Overall, retailers can benefit from positive returns by creating exciting and stimulating shopping environments (Kaltcheva and Weitz, 2006).

2.3.1 Retail Environment Theories in an Urban Context

Indeed, retailers long acknowledged to design store environments in a manner that will enhance customers' positive feelings, assuming this would lead to desired consumer behaviour (e.g. longer stays or willingness to purchase) (Mano, 1999). As outlined above, the shopping environment can be considered as in-store and out-of-store retail environments (Yüksel, 2007). Retail environment research has largely focused on how elements of the in-store environment influence consumer behaviour and there is a relative paucity of research on the out-of-store environments by comparison. Within these research streams, the dominant framework has been Stimulus-Organism-Response (S-O-R) theory and many researchers have employed and adapted this framework to various contexts within the retailing domain. The S-O-R model was first introduced by Mehrabian and Russell (1974) and later used in retail research by Donovan and Rossiter (1982) and in online retailing by Eroglu et al., (2001). With the emergence of other omnichannel retailing platforms over the years, researchers have begun to investigate whether the findings from in-store and out-of-store environments are applicable to the online (e-commerce), mobile (e-commerce), and more recently, VR (v-commerce) shopping environments and many studies continue to adapt S-O-R theory to this context.

2.3.1.1 Retail Store Environment Research

Early research in the 1970s and 1980s established that the consumption setting consists of both physical and social elements, and the tangible elements of the physical environment influence both employees and consumers' response (Baker, 1986; Parasuraman et al., 1985, 1988). Meanwhile, Kotler (1973-1974) had already clarified the importance of stimulating the five senses through atmospherics to encourage buyer specific emotional affects that increase the likeliness of purchases. Kotler (1973-1974, p. 50-51) defined "atmospherics" as *"the effort to design buying environments to produce in the buyer specific emotional effects that enhance his purchase probability…the main sensory channels for atmosphere are sight, sound, scent and touch…the fifth sense, taste, does not apply directly to atmosphere".* Since Kotler introduced this concept, studies have focused much attention on the influence of specific atmospheric variables (e.g. background music, air conditioning, fragrance) on consumer behaviour, while others (e.g. Helmefalk and Hulten, 2017) have explored store atmosphere as a holistic concept, viewing the overall effect of atmosphere on consumer behaviour. For example, recent studies focusing on specific atmospheric cues have focused on the effects of in-store music in service settings (e.g. Michel, Baumann, and Gayer, 2017; Knoeferle, Paus, and Vossen, 2017; Ferreira and Oliveira-Castro, 2011) and the role of scent in influencing behaviour (e.g. Leenders et al., 2019). Other studies have focused on the role of store atmosphere on satisfaction and loyalty (e.g. Francioni, Savelli, and Cioppi, 2018) and the impact of store atmospherics, perceived value and customer satisfaction on behavioural intentions (e.g. Jalil et al., 2016).

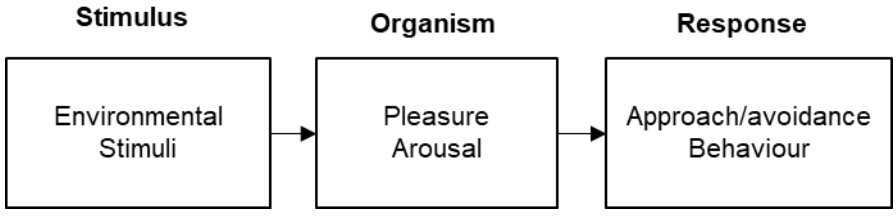
2.3.1.1.1 S-O-R Model in Retail Store Environment Research

Researchers have indicated that providing multisensory experiences influences moods and emotions and builds strong brand-consumer relationships that translates into brand loyalty, and it is therefore vital for retailers to provide multiple opportunities for consumers' sensory exploration (Kim et al., 2007; Brakus et al., 2009). Much research on the influence of environment cues on consumers' emotional states and shopping behaviour is constituted by Mehrabian and Russell's S-O-R model (see Figure ***2.1***) of pleasure-arousal-dominance (PAD) (De Nisco and Warnaby, 2014). Donovan and Rossiter (1982) were the first researchers to use this framework to help understand consumer response

(e.g. emotions, moods) to retail atmospherics. The S-O-R model indicated that stimulation (S) (e.g. lighting) and human behaviour (R) (e.g. action) are linked by an organismic component (O) (e.g. perception, emotion, judgement, thinking and motivation) (Buxbaum, 2016).

The S-O-R paradigm is an important concept for retailers to manage (Kim et al., 2007), and it has provided a basis for theoretical framework development in several disciplines such as environmental psychology (e.g. Baker et al., 1992; Morrison et al., 2011), marketing research (e.g. Wu and Li, 2018; Penz and Hogg, 2011), computer systems (e.g. Colomo-Palacios et al., 2011), e-commerce (Eroglu et al., 2001, 2003; Sautter et al., 2004; Floh and Madlberger, 2013) and more recently v-commerce (Dad et al., 2018, 2016). According to Mehrabian and Russell's (1974) three basic dimensions of emotion, pleasure is the extent to which a person feels good about the environment, arousal refers to the extent to which a person feels excited or stimulated, and dominance indicates feelings of being in control (Blackwell et al., 2006; Baker et al 1992). Specifically, the PAD scale includes three bipolar dimensions of pleasure-displeasure (i.e. how pleasant an emotion is), arousal-non-arousal (i.e. measuring the intensity of an emotion), and dominance-submissiveness (i.e. the controlling and dominant nature of an emotion) (Mehrabian and Russell, 1974).

Figure 2.1 S-O-R Model



(Source: Mehrabian and Russell, 1974)

The dimensions are useful to describe human perceptions of physical environments, indicate peoples' affective state, and influence consumers' approach-avoidance behaviour (Bakker et al., 2014). According to Fishbein and Ajzen (1975), affect refers to feeling, emotion, preference and attitude, and can be a combination of affect, cognition and connotation. Feelings can be defined as *"an affective state (such as the mood the person is currently in) or reaction (such as the feelings experienced during product consumption or processing an advertisement). Feelings may be positive (e.g. feeling happy) or negative (e.g. feeling disappointed). They may be overwhelming (such as feelings that occur during or after a near-death experience), or virtually non-existent (such as feelings that occur when taking a vitamin pill)"* (Blackwell et al., 2006, p.375). In comparison, emotions are complex mental states in response to external environments or internal thoughts, that are usually accompanied by physiological changes, cognitive thoughts and behavioural reactions (American Psychology Association (APA), 2002). Moods differ from emotions in that they are less intense, of longer duration, and are a less specific response to the environment (White and Scandale, 2005). According to Bateson et al., (1992), emotions are considered to be more intense than moods in their relationship to the stimuli they are provoked by. Additionally, emotions have affective, cognitive, physiological and behavioural outcomes (Brave and Nass, 2002), whereas a mood is a feeling state that has no apparent cause or focus (Frijda, 1993). Hence, emotions can be viewed as being easier to identify and therefore measure, and as a consequence, are of more interest to consumer behaviour researchers (White and Scandale, 2005).

Studies have consistently found that how the retail environment makes consumers feel is important, and the feelings experienced during shopping can have far more profound effects than influencing attitudes towards a retail environment (Blackwell et al., 2006). Feelings can influence consumers' shopping and spending behaviour, hence, retail environments that make people feel good benefit from shoppers spending more time and increased sales (Blackwell et al., 2006). An affective response is a powerful motivator for consumers' decision-making process because it influences information processing and choice (Zajonc, 1980). Hence, retail experiences are influenced by affective assessments that result in experiential feelings and emotional responses (Kim et al., 2007). Based on

prior studies, White and Scandale (2005) argued that an individual's affective processes play an important part in influencing purchase intention behaviours across different industries and markets. It is clear that tourism researchers have made significant progress towards understanding the relationship between an individual's affective state and tourist destinations, and the resultant marketing implications (White and Scandale, 2005). Similarly, attitudes can strongly affect consumers' purchasing behaviour and can be further defined as overall evaluative judgements that are built upon beliefs and feelings and determine the person's intentions and consequent behaviour (Blackwell et al., 2006).

Previous research has relied heavily on the PAD conceptualisation for understanding the influence of store environments on consumer behaviour (Blackwell et al., 2006). Although many other emotional scales have been developed, Yüksel (2007) identified three typologies of emotions that marketers often borrow including Mehrabian and Russell's (1974) PAD scale, Plutchik's (1980) Eight Primary Emotions (i.e. Emotion Profile Index, EPI), and Izard's (1977) Differential Emotions Scale. The Differential Emotions Scale (Izard, 1977) (Table ***2.2***) consists of ten fundamental emotions (guilt, shame/shyness, fear, contempt, disgust, anger, distress, surprise, enjoyment and interest). The scale reliably and validly divides the individual's description of his/her emotional experience into the categories of the fundamental emotions (Izard, 1977). The scale requires respondents to consider the experience and to rate how often each emotion was experienced during the experience. In the tourism literature, Izard's (1977) categorization of emotions has been adopted by tourism researchers to measure consumers' emotional responses (Correia, Oliveira, and Pereira, 2017; Li et al., 2015; Jang and Namkung, 2009). For instance, in a restaurant setting, Jang and Namkung (2009) incorporated four positive emotions (joy, excitement, peacefulness and refreshment), and four negative emotions (anger, distress, disgust and fear) into their emotion measurement items and found that emotions mediate between perceived quality and behavioural intention.

Table 2.2 Differential Emotions Scale

Affect	Nature of Subjective Experience	Reaction
Interest	Engaged, attentive, caught up, curious, fascinated; when intense, a feeling of excitement and animation	Positive
Joy	Sense of confidence and significance, feeling loved and lovable, a good relationship to the object of joy	Positive
Anger	Hostility, a desire to attack the source of anger, physical power, impulsiveness	Negative
Disgust	Feelings of revulsion; impulses to escape from or remove the object of disgust from proximity of oneself	Negative
Contempt	Superiority to other people, groups, or things; hostility (mild); prejudice; coldness and distance	Negative
Distress	Sadness, discouragement, downheartedness, loneliness and isolation, feeling miserable, sense of loss	Negative
Fear	Apprehension to terror, depending on intensity sense of imminent danger; feeling unsafe	Negative
Shame	Suddenly heightened self-consciousness, self-awareness; feeling of incompetence, indignity, defeat; in mind form, shyness	Negative
Guilt	Gnawing feelings of being in the wrong, not right with others of the self	Negative
Surprise	Fleeting sense of interruption of ongoing through, brief uncertainty, amazement or startle	Neutral

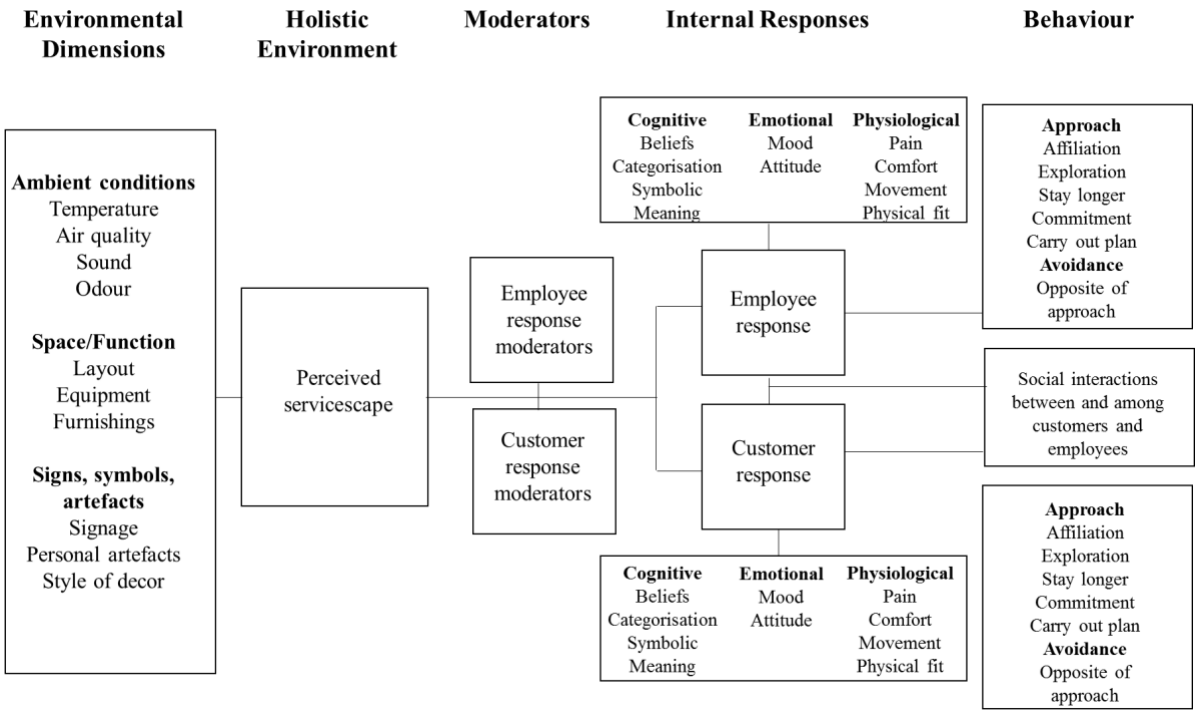
(Source: Izard, 1977)

According to the S-O-R theory, approach behaviour refers to the retailer manipulating environment cues that create specific behavioural responses where consumers want to stay, browse and purchase (Kim et al., 2007). This simultaneously generates avoidance behaviour in consumers that were not identified as the target market (Kim et al., 2007). One of the objectives in marketing and applied social sciences is to develop knowledge about influence behaviour (Bigné et al., 2005). Initial research in this area dates back to Fishbein and Ajzen's (1975) work investigating the relationship between beliefs, attitudes, intentions and behaviour (Bigné et al., 2005). Accordingly, attitude refers to the favourable or unfavourable evaluation of the behaviour (Beck Ajzen, 1991). According to Blackwell et al., (2006, p.375), intentions are *"subjective judgements by people about how they will behave in the future"*, hence, they are important because they have repeatedly been shown to be a significant predictor of people's actual behaviour.

2.3.1.1.2 Servicescape

Following the increasing attention on the influence of the retail store environment on shoppers' behaviour, Bitner (1992) recognised the lack of a theoretically based framework addressing the role of the physical environment in consumption settings. Bitner's (1992) seminal article proposing the servicescape framework (see Figure ***2.2***) received much attention in several disciplines such as retail marketing (McGoldrick, 2002; Wakefield and Blodgett, 1991, 2016), services marketing (Baron et al., 2009), place marketing (Nilsson and Ballantyne, 2014) and urban marketing (De Nisco and Warnaby, 2013). The framework has since inspired a breadth of research focusing on the impact of the physical environment in service settings on consumer behaviour (e.g. Durna, Dedeoglu, Balikcioglu, 2015; Hooper, Coughlan, and Mullen, 2013) and more recently, on the effects of servicescape on customer-employee interactions (e.g. Kaminakis, Karantinou, Koritos, and Gounaris, 2019).

Figure 2.2 Servicescape



(Source: Bitner, 1992)

Bitner draws on organisational behaviour research (e.g. Becker, 1981; Davis, 1984) and atmospherics research in marketing (e.g. Donovan and Rossiter, 1982; Kotler, 1973). The servicescape framework is the most widely used and widely cited framework to understand the effects of the physical environment on consumer behaviour in both retail (e.g. Wakefield and Blodgett, 1994, 1996, 2016; Reimer and Kühn, 2005; Chao, 2008; Li et al., 2009) and tourism settings (e.g. Yüksel and Yüksel, 2003; Jang and Namkung, 2009). Accordingly, studies have investigated the impact of servicescape variables on loyalty intentions (Harris and Ezeh, 2008), repatronage intentions (Hooper et al., 2013), consumer well-being (Sheng, Siguaw and Simpson, 2016) and organisational creativity (Kent, 2007).

To date, retail environment research has investigated topics such as emotions and satisfaction, perceived service quality, loyalty, repatronage intentions, time spent in the facility, crowding and cleanliness, and customer-to-customer interactions, and later

research has extended into e-commerce (Wakefield and Blodgett, 2016). Early research found that the physical environment has the potential to be an effective marketing tool if used strategically, as it can be used as a differentiator in signalling the intended market segment, positioning the organisation, and conveying distinctiveness from competitors (Baker, 1992; Bitner, 1992). In their early research, Wakefield and Blodgett (1994) confirmed that consumers are more likely to make repeat visits to the retailer if they have a positive perception of the retail environment. Later, they found that physical surroundings such as the building design and ambience affect consumers' intention and willingness to re-visit and recommend the store to others (Wakefield and Blodgett, 2016). Additionally, in-depth studies investigating single atmospheric cues (e.g. music, lighting, colour) have demonstrated numerous outcomes in retail settings including affective response (e.g. Ballizzi and Hite, 1992), shopping duration (e.g. Yalch and Spangenberg, 2000), merchandise evaluations (e.g. Areni and Kim, 1994), shopping satisfaction (e.g. Machleit et al., 2000) and purchase intention (Ballantine et al., 2015).

In accordance to the servicescape model, the spatial layout such as the furniture and equipment, and functionality, which is the ability of said items in facilitating performance and achieving goals, are largely controlled by the firm and can positively influence consumer experiences and behavioural intentions if used strategically (Baron et al., 2009; Bitner, 1992). More specifically, in-store spatial layout could be used to manipulate traffic flow and increase exposure to merchandise (McGoldrick, 2002; Timothy, 2005). For example, special displays could be used to promote specific attractions or act as an additional attraction to the store overall (McGoldrick, 2002; Timothy, 2005). Implementing technologies (e.g. touch screen technologies, Seshanna, 2015) into the retail environment (e.g. self-checkouts) gives consumers a sense of control, increases interactivity and enhances the overall experience, which often leads to repeat purchases (Baron et al., 2009; Wakefield and Blodgett, 2016; Arnold and Reynolds, 2003).

Additionally, the symbolic elements (e.g. signs, symbols and artefacts) in retail environments are often designed to provide cues about the service delivery to consumers and are important as consumers often draw meanings from them (Nilsson and Ballantyne, 2014). For instance, good signage can help to attract shoppers, communicate messages

effectively, promote recognition by serving as an advertisement tool, and is also an important visual communication to guide the movement of shopper traffic through specific areas within retail environments (Seshanna, 2015; Timothy, 2005). The effective design of the physical elements (e.g. building design, décor, signage and temperature) could influence consumers' cognitive and emotional response to the environment (Baron et al., 2009), consumers' intention and willingness to re-visit, recommend to others (Wakefield and Blodgett, 2016), purchase intention, and the shopping experience itself (Poldma, 2017).

2.3.1.1.3 Social Servicescape

Shopping and the retail environment are rapidly changing as informal social activities and communication modes, and marketing and advertising strategies further influence consumer decisions and choices (Poldma, 2017). Approaches to retail design have transformed substantially in the past twenty years and ways of shopping have changed and been changed by technological advancements and consumers changing needs and tastes (Poldma, 2017). Early research by Baker et al., (1994) introduced the social factor (i.e. people in the store) in their typology of servicescape in addition to two other categories including design factors (i.e. visual cues such as layout and colour) and ambient factors such as smells, sound, and lighting. Accordingly, researchers began investigating the social aspects of the servicescape (Mari and Pogessi, 2011; Rosenbaum and Massiah, 2011), given that other people are often present in the shopping environment and could influence the behaviour of consumers and employees (Nilsson and Ballantyne, 2014; Baker and Wakefield, 2011; Baron et al., 2009; Rosenbaum and Massiah, 2011; Baron et al., 2009).

Indeed, it has been argued that the mix and density of other people in retail environments must be taken into consideration (Nilsson and Ballantyne, 2014). Human density in retail settings has been largely explored as a negative element of the retail experience (Baker and Wakefield, 2011; Rosenbaum and Massiah, 2011). However, more recent research has found that some consumers perceive other shoppers in their social space to be acceptable and favourable (Baker and Wakefield, 2011; Rosenbaum and Massiah, 2011). However, this is dependent on consumers' shopping motives, as consumers that are

shopping for hedonic reasons may seek feelings of excitement and a higher need for intimacy (Baker and Wakefield, 2011; Rosenbaum and Massiah, 2011).

Furthermore, many studies in the retail and tourism domains have employed S-O-R theory to investigate the effects of atmospheric cues on consumers' internal response and subsequent behaviours. Accordingly, Table ***2.3*** provides an example of the constructs explored in such retail and tourism studies employing S-O-R theory as a theoretical foundation. The examples were limited to studies published between 2009-2019 to demonstrate the progression in this stream of research and more recent research interest.

Table 2.3 Example of Constructs explored using S-O-R Theory in Retail and Tourism Studies

Authors	Stimulus	Organism	Response
Jalil, Fikry, and Zainuddin (2016)	Store atmospherics Perceived value	Satisfaction	Behavioural intentions
Tantanatewin and Inkarojrit (2016)	Retail lighting Colour usage	Impression Identity	Behaviour intentions
Mishra, Sinha, and Koul (2014)	Ambient conditions Space Signs	Customer perception Emotional response	Approach/avoidance behaviours
Rayburn and Voss (2013)	Perceived organisation Perceived style Perceived moderness	Perceived overall atmosphere	Utilitarian shopping value Hedonic shopping value
Morrison, Gan, Dubelaar, and Oppewal (2011)	Music Aroma	Pleasure Arousal	Approach behaviours Time spent in store Money spent in store Overall satisfaction
Liu and Jang (2009)*	Dining atmospherics	Positive emotions Perceived value Negative emotions	Behavioural intentions

**Tourism studies*

(Source: Authors own)

2.3.2 Urban Retail Environment Research

The previous section highlighted that researchers have generally focused on the influence of environment cues in store, shopping centres and other service environments (e.g. restaurants) on consumers' reactions caused by specific ambient cues (e.g. Bitner, 1992; Wakefield and Blodgett, 1991, 2016; McGoldrick and Pieros, 1998). Although the urban centre environment plays an important role in attracting and retaining consumers and consequently promoting sales of the retail stores (Das and Vershneya, 2017), there has been much less focus from researchers on understanding consumption behaviours associated with the external variables of retail settings including the wider shopping centre/destination environment in comparison (Turley and Milliman, 2000; Puccinelli et al., 2009; De Nisco and Warnaby, 2013). In support of this, researchers have argued that

the impact of the exterior environment (e.g. building architecture, the characteristics of the surrounding urban area etc.) and atmospheric stimuli external to the store on emotions and behaviours (De Nisco and Warnaby, 2014; Puccinelli et al., 2009; Yüksel, 2007; Turley and Milliman, 2000) and how the city is experienced through multiple sensory modalities, not just the visual, has been largely neglected by researchers (Degen and Rose, 2012).

However, as competitive pressures exerted from edge-of-town and out-of-town locations, neighbouring cities, and more distant shopping venues increases, many urban areas are devoting increasing financial and managerial efforts to increase their attractiveness as a retail destination (De Nisco and Warnaby, 2014; Weltevreden and Van Rietbergen, 2007). According to Degen and Rose (2012), it has been established that sensory experiences are central to the design of the urban built environments. Hence, from an urban marketing perspective, a better understanding of the influence of environment cues in the urban area surrounding a retail outlet on consumer shopping behaviour is considered a relevant topic of research (De Nisco and Warnaby, 2014). Studies exploring the multisensory nature of designed urban environments are also valuable for understanding some of the key changes (e.g. economic activity, visitor behaviour) occurring to many towns and cities in the 21st century (Degen and Rose, 2012). Previously, Henshaw et al., (2016) argued that places can be considered service products or service systems, which supports that the concept of servicescape can be extended to cover urban areas. Therefore, the following discussion explores how the retailing principles discussed in the previous section have and can been applied to the wider urban centre.

2.3.2.1 Multisensory Experiences in Urban Centres

In essence, there is a superabundance of sensory affordances that are situated within the city (Low, 2015) and the combination of these sensory cues (e.g. visual, sound, smell, touch) are usually perceived and appreciated as an interconnected whole (Carmona, 2010) subjective to one's sensory experiencing of the built environment (Degen and Rose, 2012, p.3271). As Law (2005) previously outlined, *"the street looks and feels differently depending on the perspectives of those inhabiting urban spaces",* and these multisensory experiences of place vary considerably from one place to another (Degen

and Rose, 2012). Cities are sites of human experience that comprise social relationships, memories and emotions and embedded within this sociality is how the senses mediate one's engagement with urban growth and development (Low, 2015). Researchers have argued that the focus on senses in urban research is important because human engagement in and with public spaces in cities is first and foremost an embodied sensory encounter (Lefebvre, 2004; Simmel, 1997). Indeed, a focus on the senses offers a way of analysing the relationship between built form, temporal dynamics, and social relations as senses provide the framing texture for the material and social bond in public spaces (Degen, 2017). In the urban context, multisensory experiences are informed by urban design and placemaking, urban soundscape and smells.

2.3.2.1.1 Urban Design and Placemaking

Urban environments are increasingly often designed to be distinctive, vibrant and beautiful in order to create memorable sensory experiences for the people who pass through them (Lonsway, 2009; Klingman, 2007; Allen, 2006; Thrift, 2004). In the urban marketing sphere, the study of why cities look the way they do, as well as the practice of planning a city's building form and layout is referred to as urban design (Lew, 2017). This notion is also recognised as placemaking, which stemmed from urban design as a result of urban planners, architects, and landscape architects becoming increasingly pressed to guide community development to achieve economic (attract investment and employment), social (increase equity and liveability), and environmental (resource efficiency and sustainability) goals (Wyckoff et al., 2015). Urban design as placemaking became *"the process of creating quality places where people want to live, work, play, shop, learn and visit"* (Wyckoff et al., 2015, p.6). Similarly, Goodwin (2011) defined placemaking as a process used by architects and planners to describe and discuss the process of creating public spaces (e.g. waterfronts, squares and shopping malls) that attract visitors (e.g. people, residents, day excursionists and tourists) because they are interesting and pleasurable places to be. This was supported by Lew (2017) who stated that urban design-based placemaking is an essential element that it widely employed in creating destinations that are interesting to visitors. According to Musterd and Kovács (2013), the main goal of placemaking is to market the city with the use of sophisticated strategies to associate the city with positive images. Hence, tourism destination planning

and marketing are fundamentally placemaking actions intended to shape image and imageability of a place (Lew, 2017).

This notion of placemaking emphasises how the design and experiences of places, buildings, landscapes and public places are intended to benefit the local people and businesses as well as visitors (Goodwin, 2011). This includes, for example, public spaces that exist in the community such as sidewalks and streets, parks and other recreations and open space (Lew, 2017). However, it also includes semi-public spaces such as shopping malls and large building lobbies (Lew, 2017). Placemaking is used as a tool to enhance a city's competitive edge in attracting the creative classes (Florida, 2002) and fostering an innovative economy (Landry, 2000). Talented individuals and investment are attracted to places that have high amenities and a high quality of life, which governments, through their planning and legal authority, have the power to encourage and create (Lew, 2017). Therefore, many urban areas devote increasing financial and managerial efforts to optimise the attractiveness design and to provide additional service to attract visitors (De Nisco and Warnaby, 2013).

Nowadays, planned placemaking is widely seen in the form of themed pedestrian-oriented shopping streets and downtown shopping and restaurant venues, which are major attractions for both residents and visiting tourists in many cities (Gottdiener, 2001; Lew, 2007; Paradis, 2004). Prior research suggested that the appearance of retail stores and the physical space and functionality provide cues upon which customers base their perception of service quality provided in an urban area (De Nisco and Warnaby, 2013). For instance, attractive and innovative window displays could affect store image (Cornelius, Natter and Faure, 2010), sales (Edwards and Shackley, 1992) and positively influence behavioural intentions to visit a store (Sen, Block and Chandran, 2001). Similarly, at the wider scale, consumers perceived image of a total shopping area is integral to decision-making, patronage intentions and the shopping areas equity (El Hedli and Chebat, 2009). Research in the environmental psychology on urban settings suggested that individual's perception of the aesthetic attributes of streetscape could trigger emotional reactions such as pleasantness, excitement, arousal and relaxation (Nasar, 1990; Russell and Snodgrass, 1987). Design factors such as signs are

considered an important element of urban design contributing to the visual appearance of the city as an organised spatial structure (Sokolova, 2018). An urban sign is a polycode text, a visual media message created by a combination of various codes including verbal, architectural, compositional, graphic (including font), colour, photic etc. (Sokolova, 2018). Criticism of urban environment design is primarily associated with the violation of the historical appearances of the city, when big bright and often tasteless signs overlap the elements of the architectural décor and disrupt the harmony of the city's historical development (Sokolova, 2018).

Within the urban context, De Nisco and Warnaby (2013) operationalised spatial layout and functionality as the ability of spaces and physical facilities to provide for ease of entry and exit and to facilitate browsing and accomplishment of goals (e.g. pedestrian street maintenance, availability of parking and ease of pedestrian movement in streets). Creating walkable cities has been an important urban issue because such cities offer certain advantages such as lower automobile usage, more opportunities for local shopping and social cohesion and improved health for citizens (Kang, 2015). Recently implemented urban policies and designs for cities that facilitate walkability and pedestrian-friendly cities have provided a highly favourable urban setting for retail sales (Kang, 2016). This is supported by studies investigating the relationship between walking environments and retail economic performance that implicitly assume that more pedestrian-friendly environments attract more walkers, generating higher retail sales (Kang, 2016). Pedestrian-friendly urban structures tend to increase people's willingness to visit retail stores (Schneider, 2015), which is important for the economic performance of local businesses (Robertson, 1993). For retailers, town layout is important because it encourages circulation and cross shopping between retailers and a simple linear format makes it easier for shoppers (particularly those visiting for the first time) to comprehend and focus on shopping (Lew, 2017; Gibbs, 2012).

2.3.2.1.2 Soundscape in Urban Centres

Ever since the concept of *soundscape* emerged in the 1970s in the study of contemporary music (e.g. Shafer, 1977), researchers have investigated how acoustic environments would affect the perceived quality of cities and how sounds could be used in urban

planning and design (Aletta et al., 2016). A common definition of soundscape, which is drawn upon in the literature (e.g. Hermida and Pavon, 2019; Sun et al., 2019; Aletta et al., 2016), is by the International Organisation of Standardisation (ISO) (2014), who defined the soundscape as *"[the] acoustic environment as perceived or experienced and/or understood by a person or people, in context".* Accordingly, it is the acoustic equivalent to *landscape* and includes all sound sources, wanted and unwanted (The Environment and Health Administration, 2010), including natural sounds (e.g. wind, water) and environmental sounds created by humans through musical composition, sound design, and other human activities including sounds of mechanical origin resulting from the use of industrial technology (Elmqvist, 2013). Additionally, researchers highlighted the importance of understanding the difference between the acoustic environment and soundscape (Hermida and Pavon, 2019; Aletta et al., 2016). While soundscapes relate to the perception, experimentation, and comprehension of acoustic environment mediated by context, acoustic environments refer to the overall sound of all sound sources modified by the environment (Brown et al., 2016; ISO, 2014; Brown et al., 2011). Several objectives of urban soundscape are to enhance the visual image of cities and to play an important role in tourism in order to increase economic benefits, to create an attractive setting for economic investment, and to promote well-being, safety liveliness, happiness and excitement in cities (Rehan, 2016, Brown, 2011; Kang, 2011).

In an urban context, the soundscape is considered an aspect of the urban design where sounds are essential in creating a sense of place (Rehan, 2016). The soundscape contributes to the perceived quality of the urban environment and the identity of a city, and the many types of public outdoor spaces in urban centres each have their distinctive soundscape (Sun et al., 2019; Rehan, 2016). These sound sources, whether human-made or nature-made, vary in pace (e.g. lively or peaceful), volume (e.g. loud or quiet), and are determined by region (Liu et al., 2018). A person's preference of soundscape differs in place and contexts and according to Brown et al., (2011), the soundscape of a place would be preferred because it is peaceful, lively, creates a sense of excitement, or provides information and so on. The ambient sounds experienced in urban environments may evoke thoughts and emotions, influence mood or steer behaviour (Sun et al., 2019),

hence, the emotional experience gained by visitors is often expressed as a sensory perception of the soundscape (Votsi, Mazaris, Kallimanis, and Pantis, 2014).

2.3.2.1.3 Smell in Urban Centres

Although planners and architects have an inherent understanding of visual (e.g. the appearance of buildings and lightings), tactile (e.g. pavement/walkway surfaces and textures) and aural (e.g. designing buildings/areas to deflect traffic sound) stimuli within an urban space, the sense of smell seems to be a relatively neglected sensory consideration (Henshaw et al., 2016). Indeed, smell is another non-visual sense that can provide a more overtly immersive consumer experience in service environments such as retail stores (Henshaw et al., 2016). However, in the existing literature, the active use and manipulation of smell within an urban centre focuses on the basic management of typically unpleasant/unwanted odours (e.g. waste removal) for the purpose of environmental improvement (Henshaw et al., 2016). The promotional tourist literature and guides to enhance the visitor experience when navigating an urban space highlight how smell can be used to help promote the place product (Henshaw et al., 2016). Prior research highlighted how smells can encourage purchases by attracting consumers into particular spaces (Henshaw et al., 2016) and influence time spent evaluating products (Spangenberg et al., 2004; Morrin and Ratneshwar, 2000). Therefore, marketers are using ambient smell to condition meaningful and enduring attachments between consumers and spaces (Canniford et al., 2018).

Additionally, the growing interest in smell from marketers could be due to the strong link between olfaction and emotional reaction (Bradford and Desrochers, 2009). In support of this, existing marketing theory indicated that smells can work *"just above the conscious level of awareness"* to leverage the *"personal emotional responses associated with that smell"* (Anderson, 2014, p.36). Indeed, smell elicits memory and emotion (Engen, 1991), and can transport people back to previously encountered spaces (Riach and Warren, 2015; Tuzin, 2006; Corbin, 1986). As such, the smell is intended to situate individuals in a space, even if this is historically or culturally elsewhere (Canniford et al., 2018). Indeed, Rodaway (1994, p.76) previously stated, *"Olfactory geographies change…and differ from place to place as cultures do".* In support of this, more recently, Canniford et al., (2018)

suggested that smells identify and directly link people with spaces and encode spatial assemblages with meaning and power. Overall, ambient smells that are either intentionally or unintentionally introduced into the urban environment can provide an additional dimension to urban place marketing in the future (Henshaw et al., 2016).

2.3.2.1.4 Urban Centres as Social Environments

Furthermore, when consumers shop in a town centre, they identify with individuals and social groups, potentially forming links and reciprocal obligations towards their community as a whole (Miller and Kean, 1997). Accordingly, place identity refers to the identification of tourists or visitors with a destination or attraction (Ramkissoon, Weiler, and Smith, 2012; Tsai, 2012). As a result, town centres are likely to hold more personal meaning to consumers through habituation and familiarity than simply performing as a shopping destination (Relph, 1976). According to Hart et al., (2013), the social environment and the consumer's perceived relationship with the place and other people influence the images formed. For example, if a consumer perceives his/her self-image as congruent with that of other shoppers in a specific place, he/she is believed to view a shopping area more favourable (Sirgy et al., 1997). In turn, this leads to greater satisfaction with the customer experience and increased patronage (Verhoef et al., 2009). This is also the case with destinations, and according to self-congruity theory, tourists tend to choose destinations whose typical visitor image is congruent with their own self-image (Pan, Zhang, Gursaoy, and Lu, 2017). Indeed, consumers who enjoy the social element of the customer experience are likely to shop more frequently in that location and develop more familiarity with it as a result (Haytko and Baker, 2004; Miller and Kean, 1997). Increased familiarity is a result of feeling more comfortable in an environment because of more frequent interaction, increased trust, and identification with other people who are perceived as similar (Haytko and Baker, 2004; Line, Runyan, Costen, Frash, and Antun, 2012). Increased familiarity and social nature of the customer experience leads to positive communication (e.g. word of mouth) and could enhance the reputation of the place (Line et al., 2012; Brown, Barry, Dacin, and Gunst, 2005).

Overall, a well-designed and pleasure-inducing urban shopping location could lead consumers to spend more time and to visit a large number of retail outlets (De Nisco and

Warnaby, 2014). Therefore, it is important for retail managers to be aware of the importance of the external physical environment of the broader urban shopping destination, and also how emotional reactions related to the external stimuli affect specific shopping outcomes (De Nisco and Warnaby, 2014). However, there are limited studies investigating urban atmospherics, therefore, further investigation is required to evaluate the impact of different urban environmental stimuli on emotional states and outcomes (De Nisco and Warnaby, 2014).

2.3.3 Omnichannel Retailing - E-commerce and M-commerce

Since the turn of the century and the accelerated emergence of additional sales channels, retailers have had to effectively respond to changes in how people shop (Jones and Livingstone, 2018). They have had to provide flexibility, rapidly adjusting their sales methods and physical stores in order to remain relevant and competitive in the marketplace (Jones and Livingstone, 2018). In 2016, online retailing in the UK accounted for 15.8% of all retailing (ONS, 2016a) and amounted to a total value of £133bn, which was a 16% growth on the previous year (IMRG Capgemini, 2017). The widespread adoption of the internet is largely due to its increasing accessibility (Jones and Livingstone, 2018) and during 2016, 23.7 million people of British households had internet access with 77% of adults having bought goods and services online (ONS, 2016b), which indicated that online shopping has become an integrated component of retail sales (Jones and Livingstone, 2018).

Many UK retailers have responded to the Internet by offering omni-channel retailing, which provides consumers with various media through which to browse and purchase in addition to in-store shopping (e.g. online shopping, mobile applications and social media) (Jones and Livingstone, 2018). Specifically, omni-channel retailing can be defined as the synergetic integration of channels for the purposes of creating a unified brand experience for customers, regardless of the channel or stage they are in during the purchasing process (Cummins et al., 2016). For instance, in the UK physical retailers including Next, John Lewis, and Debenhams have embraced the internet, and multichannel shopping is now central to their corporate retail strategy (Jones and Livingstone, 2015). For retailers, the internet allows them to lower set-up and running costs compared with opening a

physical store but without a recognisable brand/presence to support sales (Jones and Livingstone, 2018).

In a recent study consisting of interviews with senior management from leading retailers (Next, John Lewis and Debenhams), it was found that online retailing complements the in-store experience and enhances their overall profitability (Jones and Livingstone, 2018). Additionally, online sales are expected to continue growing and e-commerce is perceived as much more cost-effective than selling goods in-store (Jones and Livingstone, 2018). Internet shopping platforms provide an efficient and attractive multi-channel retail experience and are central elements within the real estate strategies of these retailers (i.e. out-of-town, town/city centre, retail parks) (Jones and Livingstone, 2018). Online retailing has tended to reinforce decentralisation trends within urban areas, which is evident given that leading retailer Next has more shops in retail parks than in town/city centres and continues this movement as it continues to embrace an omni-channel approach to retailing (Jones and Livingstone, 2018). Recent research indicated that shopping centre type rather than the characteristics of the local population are the key determinant to e-resilience (Singleton et al., 2016).

2.3.3.1 E-Commerce

Nowadays, e-commerce is one of the most successful applications of digital marketing (Alçaniz et al., 2019) and can be defined as the process of selling goods and services using electronic media, particularly the internet (Dennis et al., 2004). Since the emergence of e-commerce, both marketing and information systems (IS) researchers have begun to explore the extent to which findings from bricks-and-mortar retailing are applicable to the online shopping context (Floh and Madlberger, 2013). There are many advantages for retailers to use online retailing such as wider market coverage, increased base of potential consumers, cost-effectiveness, diffusion of risks, flexibility, customer loyalty, improved image, and brand revitalization (Heinemann and Schwarzl, 2010). For the consumer, online retailing offers value through price comparison opportunities, it is more convenient, and constraints of time and space are eliminated, which all combine to make it a significantly different context compared with conventional retail settings (Eroglu et al., 2001; Kalakota and Whinston, 1997).

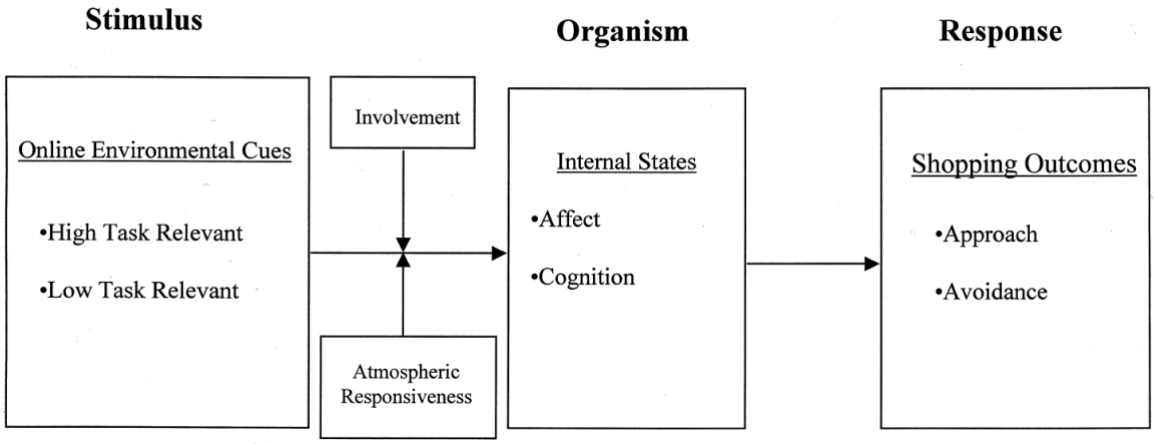
One important issue drawn from traditional retailing that provides important implications for online retailing is how to use atmospheric cues in an online environment to entice and retain online consumers (Floh and Madlberger, 2013; Wang, Hernandez, and Minor, 2010; Eroglu et al., 2001). Just as in retail store environment research (Donovan and Rossiter, 1982; Bitner, 1992; Sherman, 1992), various psychological and behavioural outcomes (e.g. satisfaction, repatronage, amount purchased, and time spent in the virtual store) result from certain atmospheric qualities of the online shopping environment (Eroglu et al., 2001; Abbott et al., 2000; McKinney, 2004; Kumar et al., 2010; Wu et al., 2013; Ettis, 2017). Loureiro (2019) also claimed that web atmospherics encompass the conscious designing of web environment to create positive emotions and cognition, which leads to favourable consumer outcomes such as revisiting or rebuying. Eroglu (2001, p.179) adapted Kotler's (1973-1974) definition of atmospherics and defined online atmospheric stimuli as *"the sum total of all the cues that are visible and audible to the online shoppers".* Similarly, adapting from Kotler (1973), Dailey (2004, p. 796) defined web atmospherics as *"the conscious designing of web environments to create positive effects in users in order to increase favourable consumer responses (e.g. site revisiting, browsing etc.)".* Accordingly, website quality can be used to express the designing and atmospherics of the virtual space (Loureiro, 2019).

Several outcome benefits of the online shopping experience for consumers includes convenience, price comparison, saving time and enhanced customer-retailer relationship (Chen and Chang, 2003; Doolin, Dillon, Thompson, and Corner, 2005; Ha, 2004). These benefits have been found to motivate online shopping in various hedonic and utilitarian contexts (Childers, Carr, Peck, and Carson, 2001). Three main outcomes of the online customer experience as identified in prior studies includes satisfaction, trust and repurchase intention (Ha and Perks, 2005; Janda and Ybarra, 2005; So, Wong, and Sculli, 2005; Jin, Park, and Kim, 2008; Ranaweera, Bansal, and McDougall, 2008). As previously discussed in the traditional retailing context, shoppers' environmental perceptions affect their approach behaviours and time and money spent in store (Donovan and Rossiter, 1982) and this has also been confirmed in the online shopping context (Eroglu et al., 2001).

In addition to conventional variables found in traditional retailing research, internet and emerging technology research produce new constructs, which are very applicable to the new shopping experiences offered by technology (e.g. presence) (Eroglu et al., 2001). Additionally, research in the tourism sector presented a review of factors to analyse the online atmospheric environment (Loureiro, 2015). Accordingly, functionality and usability were two of the most frequently employed in past studies followed by website design, informativeness, or safety and security (Loureiro, 2015). Similar to traditional retail research, many online studies have employed the S-O-R theory (Mehrabian and Russell, 1974) when developing models demonstrating the effects of web variables on consumers response and subsequent behaviours (e.g. Wu et al., 2013; Rose et al., 2012; Wang et al., 2011; Wang et al., 2010; Fiore et al., 2005). Initially, Eroglu et al., (2001) provided a theoretical model to explain the role of atmospherics in the online retailing context based on the S-O-R paradigm (see Figure ***2.3***). Their framework suggested that certain atmospheric elements of the online store influence the consumer's affective and cognitive internal states, which intervene the approach/avoidance behavioural responses to the online shopping experience (Eroglu et al., 2001).

Since then, many researchers have explored various constructs using the S-O-R theory in online retailing and tourism contexts (see Figure ***2.3***), however, a more comprehensive framework is yet to be established (Wu et al., 2013). The majority of studies adapt Eroglu et al's. (2001) model by employing affect and cognition, or specific elements of affect (e.g. emotional arousal) and cognition (e.g. attitude), as the mediating variables between web stimuli and consumer behaviour. For instance, Wu et al., (2013) aimed to investigate the relationships among layout design, atmosphere (stimuli), emotional arousal, attitude toward the website (organism) and purchase intention (response). Additional affective responses include satisfaction (Prashar et al., 2017; Wang et al., 2011, Wang et al., 2010) and enjoyment (Floh and Mandleberger, 2017), while cognitive responses include flow (Gao and Bai, 2014) and online service quality (Wang et al., 2011; Wang et al., 2010). However, according to Loureiro (2019), the typology of atmospheric cues depends on the context; therefore, researchers tend to choose the most appropriate approach for the characteristics of the website under research.

Figure 2.3 S-O-R Model of Consumer Response to Online Shopping



(Source: Eroglu et al., 2001)

2.3.3.2 M-Commerce

Nowadays, many people also rely on mobile devices when purchasing physical and digital goods, making payments, browsing and searching for information, and managing personal finances on mobile devices rather than personal computers (PC) (Huang, 2017; Ozturk, Nusair, Okumus, and Hua, 2016). Mobile technology (e.g. mobile phones, tablets, etc.) is integrated into consumers' daily lives and the dependence on these devices is only increasing (Lee, 2018; Chhonker, Verma, Kar, and Grover, 2018; Kourouthanassis and Giaglis, 2012). Statista (2018a) reported that 4.57 billion people owned a mobile phone in 2018, a figure that is forecast to increase over the next two years (4.68 billion in 2019 and 4.78 in 2020). Recent developments and innovation in information technology have provided several flexible information management and services in the form of mobile shopping applications (Kar and Singh, 2012; Singh et al., 2017). Mobile commerce (hereafter, m-commerce) is considered an extension of e-commerce that offers consumers' convenience and accessibility by allowing them to conduct online transactions via a handheld device (Mahatanankoon, 2007; Balasubramanian, Peterson, and Jarvenpaa, 2002).

More specifically, the term m-commerce has been defined as the business activities or monetary transactions (e.g. shopping, banking, purchasing mobile phone services and

investing) conducted on mobile devices over wireless networks using the Internet (Zhang et al., 2012; Sumita and Yoshii, 2010; Ko, Kim, and Lee, 2009). In recent years, the ubiquitous presence of mobile networks, wireless devices, and the improving safety of mobile payments has led to an increase in the use of handheld devices to deliver m-commerce (Li, Dong, and Chen, 2012). In 2018, the global m-commerce transaction value reached 459.38 billion U.S. dollars, and is set to surpass 693 billion U.S. dollars in 2019 (Statista, 2018b).

Similar to the e-commerce literature, researchers have begun to explore m-commerce using the S-O-R theory. Notably, m-commerce research is still in its infancy with most studies emerging in recent years following the widespread adoption of mobile devices. Likewise, mobile application research with regards to atmospherics, aesthetics and design etc. is an important topic that requires further investigation (Lee and Kim, 2019). Nevertheless, several m-commerce studies employing S-O-R theory published in the past ten years (2009-2019) were identified (see 12.2), which also highlights the context of the studies. In these studies, the stimulus is often mobile characteristics (e.g. ubiquity, convenience, localisation) and mobile servicescape (e.g. aesthetics, design factors, layout and functionality) factors. Studies investigated the effects on response including usage (e.g. browsing, urge to buy), perceptions (e.g. pragmatic or hedonic), attitude (e.g. toward using mobile devices for communication and commerce), loyalty, engagement and consumption experience. Mediating the relationship (i.e. organism) was mostly affective (e.g. emotions, pleasure, arousal, enjoyment) and cognitive (e.g. usefulness, ease of use and attitude) responses. For example, a recent study by Huang (2017) found that an interesting, enjoyable and fun interaction process when visiting mobile web sites can evoke consumers' positive feelings (i.e. pleasure) and browsing activities, which is critical to inducing consumers' impulsive purchase intention. Additionally, web atmospherics tend to influence consumers' perceived dominance of mobile websites, which increases their perceived control over the interaction process (Huang, 2017).

Furthermore, Yoo et al., (2015) argued that the success of retailing does not only lie in physical stores and traditional e-commerce environments but also in virtual stores and environments as well. Hence, virtual environments (e.g. virtual worlds and virtual

marketplaces) are considered the next major step of e-commerce (Jung and Pawlowski, 2014), and more recent research has begun to apply e-commerce and traditional retailing research in the context of virtual environments (Krasonikolakis, Vrechopoulos, Pouloudi, and Dimitriadis, 2018; Schnack et al., 2018), which is the context that this study is situated.

2.3.4 Summary

The aim of this chapter was to provide context to the thesis and highlight the important role of retailing in the marketing of urban places. Drawing on place management literature enabled an in-depth discussion of the retail formats in these urban places and the various management schemes, which was useful to understand the persons responsible for implementing new technologies to attract visitors. By reviewing the retail environment research on both in-store and out-of-store retail environments, it became clear that research on the latter is limited by comparison. More specifically, many researchers have focused their attention on investigating the effects of in-store environment cues on shoppers' behaviour. However, pleasing out-of-store environments such as in town centres have become important in attracting people to these areas to shop, which reinforces the importance of advancing the understanding of how the design of these environments influences visitors shopping behaviour. S-O-R theory is the dominant framework utilised by researchers investigating consumers response to a specific environment and with the emergence of new retailing channels and marketing technologies, further research is required to determine its applicability to these new contexts. Indeed, there is now substantial literature applying S-O-R theory to the e-commerce and m-commerce contexts, however, as retailers and consumers gain interest in emergent technologies and retailing channels (i.e. v-commerce), it is important to extend this research into the new context in order to understand how VR retail environments should be designed to generate positive consumer experiences and provide a useful tool for retail and urban place marketers. Therefore, the following section explores how these marketing principles apply to VR when utilised for urban place marketing.

Chapter 3 – Immersive Technologies and Technology Adoption

3.1 Introduction

The purpose of this chapter is to provide an overview of immersive technologies before moving on to discuss VR in more-depth given that it is the focus of this study. Additionally, this chapter aims to determine the core components of immersive experience that distinguish VR technology from prior 2D marketing channels (e.g. online, mobile etc.), including immersion and presence and increased simulation of multisensory cues. Several applications of S-O-R to the VR context are then provided before the chapter moves on to discuss technology adoption research and related theories. More specifically, the final sections within this chapter highlight how drawing on a dominant technology adoption theory (i.e. TAM) could help to achieve the aim of this study, which was to explore the influence of VR retail environment cues on visitor's behavioural response in the context of urban shopping destinations.

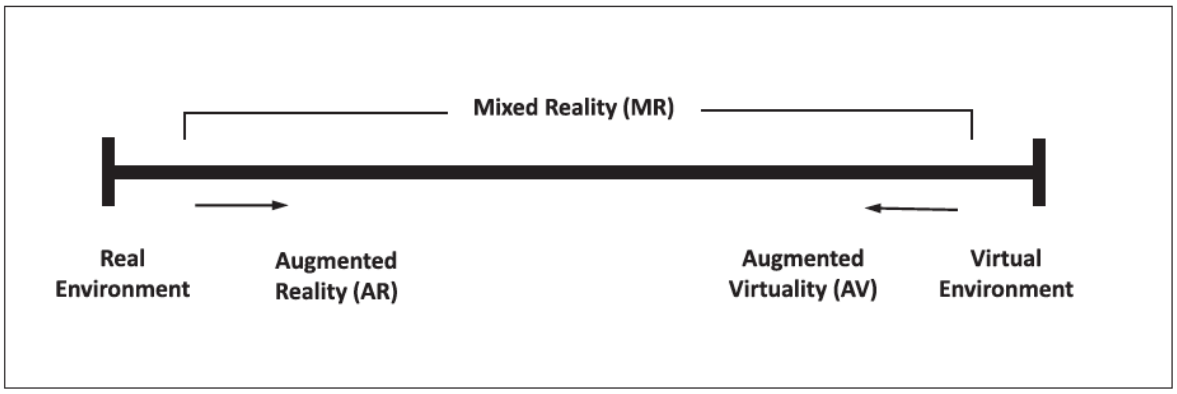
3.2 Definition of Immersive Technologies

The arrival of immersive technologies such as VR, AR and Mixed Reality (MR) technologies are shaping a new environment where physical and virtual objects are integrated at varied levels (Flavian et al., 2019). Over the last few years, these technologies have received growing interest from both researchers (Flavian et al., 2019; Schnack et al., 2019; Siegrist et al., 2019) and industry marketers. However, theoretical confusions exist about what immersive technologies mean for the marketing field (Flavian et al., 2019). Prior to investigating the use of immersive technologies (specifically VR) in the marketing domain, it is important to provide a clear definition of immersive technologies more broadly and each immersive technology more specifically. Indeed, prior researchers have used the terminology interchangeably (Jeon and Choi, 2009), which reinforces the need to set clear boundaries between the realities that current technologies are able to create (Flavian et al., 2019).

Suh and Prophet (2018) draw on the reality-virtuality continuum (see Figure ***3.1***) proposed by Milgram and Kishino (1994) in order to understand the concept of immersive technology and its scope. The continuum has been the starting point for researchers to classify the wide variety of realities that ranges from real (i.e. the reality itself) to virtual (i.e. fully immersive computer-generated environments) environments at the extremes of the continuum (Flavian et al., 2019).

Figure ***3.1*** portrays how the real to virtual environments can be understood as a continuum, where AR or VR is one area within the general area of MR (Suh and Prophet, 2018). In the continuum, Augmented Virtuality (AV) and VR are used interchangeably because real objects are added to virtual environments in both AV and VR (Hsiao, Chen, and Huang, 2012). In support of this, Flavian et al., (2019) stated that AV involves all content superimposed on the user's virtual environment. Although, AR, AV and VR are part of MR (Flavian et al., 2019), the sense of immersion is achieved differently along the continuum (Suh and Prophet, 2018). Accordingly, mobile AR applications accessed on mobile devices (e.g. smartphones and tablets) can augment the immediate environment in real time with digital information such as 2D/3D images, video, audio and/or text (van Esch et al., 2019). In comparison, VR provides a fully immersive experience where the user can interact with the digital landscape and according to Berg and Vance (2017), this technology enables people to experience a world beyond reality. In comparison to VR, AR aims to supplement the real world rather than creating an entirely artificial environment (Handa et al., 2012). Accordingly, AR and VR could be understood as technologies that create certain degrees of MR and enable users to experience a sense of immersion in a synthetic environment where physical and virtual objects co-exist (Di Serio, Ibáñez, and Kloos, 2013).

Figure 3.1 Reality-Virtuality Continuum



(Source: Milgram and Kishino, 1994)

According to Rauschnabel et al., (2019), recent developments suggest a future where AR will be similarly indispensable to both consumption and marketing. Consumers will operate in a reality that is consistently enriched with virtual content, and marketers need to find ways to integrate these new realities into their marketing strategies (Rauschnabel et al., 2019). Because AR media is overlaid on to the real world, users may have a shared experience through AR as the physical objects in the physical surrounding environment become a backdrop for AR computer-generated content (Handa et al., 2012; Guttentag, 2010). Users are able to see the final output displayed on the screen but cannot see the technology's operation (Poushneh, 2018). The widespread adoption of smartphones and other mobile devices has meant that AR has received increasing interest from developers and companies (Rese et al., 2017). Indeed, many businesses are now developing and implementing AR (Rese et al., 2017; Yim and Chu, 2013) and mobile AR retail applications available for consumers have emerged (Poushneh, 2018).

For example, applications may include virtual mirrors/try-ons, which operate by having consumers gaze into a mirror that reflects the consumer's body image onto which a computer-generated representation of the product is superimposed (Yim and Park, 2019) (see Javornik, 2016a; Beck and Crié, 2018). Additionally, furniture planning AR applications (e.g. Wayfair and IKEA) allow users to see furniture in his/her own home (see for example, Rese et al., 2014, 2017) by offering AR-based online catalogues, which

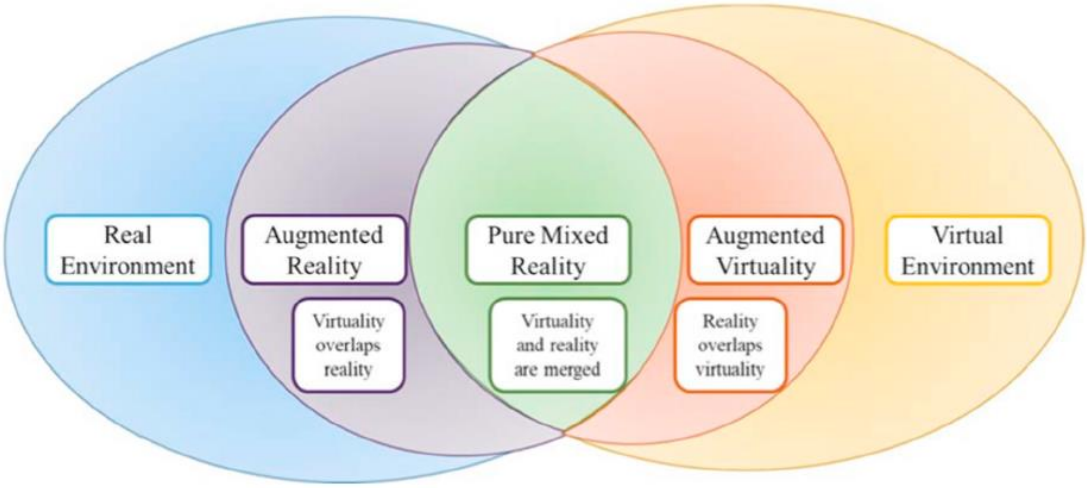
provide customers the option of digitally placing, moving and recolouring realistic 3D models of furniture such as a coffee table in their living room (Heller et al., 2019). The introduction of this technology has eroded the divide between online and offline channels (van Esch et al., 2019) and has the potential to generate value through compelling buying experiences across existing and emerging retail channels (Rafaeli et al., 2017). Research shows that AR has the potential to capture consumers attention and by using this technology consumers can access enhanced product information (van Esch et al., 2019) such as 3D product images in various formats (e.g. shapes, colours, and styles) (Kim and Forsythe, 2008), which can assist them with purchasing decisions (Pantano, 2014; Oh et al., 2007). This overcomes the limitation of online shopping where lack of product information and being inadequately informed about products makes a purchase decision risky (Kim and Forsythe, 2008). Similarly, AR applications such as virtual try-ons would be able to overcome a crucial limitation of e-commerce by enhancing interaction possibilities with the product through the possibility to experience or try the product in terms of scent, texture, appearance, fit or sound (Lu and Smith, 2007).

Regarding VR, an earlier definition commonly used in the literature (e.g. Suh and Prophet, 2019) is by Steuer (1992, p.76) who defined VR as *"a real or simulated environment in which a perceiver experiences telepresence".* More recently, VR has been defined as a computer-generated immersive 3D virtual environment (VE) where the user is immersed in the virtual world and can experience and potentially explore interactively, predominantly through their own vision, but also through audio, tactile, and other forms of feedback (Handa et al., 2012). VR is often experienced through a Head-mounted Display (HMD) (e.g. Samsung Gear VR, Google Cardboard, or HTC Vive) and uses computerised and behavioural interfaces to simulate the behaviour of 3D entities such as people, places and objects in a VE (Hudson et al., 2019). The user can navigate (i.e. move around and explore) and possibly interact (i.e. select and move objects) within the virtual environment, which results in real-time simulation of one or more of the user's five senses (sight, sound, visual, touch and scent) (Handa et al., 2012; Guttentag, 2010; Vince, 2004; Gutierrez et al., 2008). With the evolution of VR-related technologies, there has been a push forward in the current state of the art for multisensory systems where several senses are

stimulated at the same time, and users are presented with real experiences designed in the virtual worlds (Martins et al., 2017).

More recently, Flavian et al., (2019) aimed to extend the reality-virtuality continuum (Milgram and Kishino, 1994) in order to overcome the terminology confusion and help academics and practitioners to select the appropriate term for each reality (virtual, augmented or mixed) (see Figure ***2.3***). Flavian et al., (2019) argued that MR should no longer be the broad part of the continuum that includes AR and VR as suggested by Milgram and Kishino (1994). It should be regarded as an independent dimension falling between AR and AV and characterised by the total blend of virtual holograms with the real world, which led the authors to modify the continuum to include Pure Mixed Reality (PMR) at the centre (Flavian et al., 2019). In PMR, users are placed in the real world and digital content is totally integrated into their surroundings, so that they can interact with both digital and real contents, and these elements can also interact with each other (Flavian et al., 2019). Importantly, virtual objects are rendered so they are indistinguishable from the physical world, rather than being superimposed on the physical environment as with AR (Flavian et al., 2019). For example, in PMR, users would not be able to see a virtual box under a table unless they bent down to look at it, whereas in AR, the box would be overlaid, and it would be unnecessary to bend down (Flavian et al., 2019).

Figure 3.2 Expanded Reality-Virtuality Continuum



(Source: Flavian et al., 2019)

Accordingly, HMDs such as Microsoft HoloLens offer a PMR experience (Flavian et al., 2019). In this case, MR blends people, places and objects from both the physical and virtual environment and enables the user to create a wide range of experiences (Microsoft, 2017). The interaction with responsive holograms in MR enables the user to visualise and interact with digital content as part of the real world (Microsoft, 2017). Likewise to VR, MR devices show potential in retailing as they could allow consumers to explore product displays, acquire product knowledge and complete transactions (Quinn, 2017).

Table 3.1 provides a summary of the different realities in the proposed continuum according to Flavian et al., (2019) who argued that all current and future technologies would always fall within one or other of the proposed reality categories.

Table 3.1 Definitions of different realities in the expanded continuum

Reality	Definition
Real environment (RE)	An actual environment where users interact solely with elements of the real world
Augmented Reality (AR)	Characterised by digital content superimposed on the users' real surroundings
Pure Mixed Reality (PMR)	Users are placed in the real world and digital content is totally integrated into their surroundings, so they can interact with both digital and real contents, and these elements can also interact
Augmented Virtuality (AV)	Involves real content superimposed on the user's virtual environment
Virtual Environment (VE)	A completely computer-generated environment where users can interact solely with virtual objects in real time

(Source: Authors own)

3.2.1 VR Hardware and Software Developments

Recently, Manis and Choi (2019) operationalised VR into three components including VR content, VR hardware and VR experience. Firstly, *VR content* refers to an environment simulating a sense of presence in the real world or an imagined world (Manis and Choi, 2019). Typically, content can be displayed by realistic images or video in a 360-degree or 3D digital representation of a real environment (Martínez-Navarro et al., 2019). The 360-degree format is more affordable and is based on videos or images of real situations captured by 360-degree camera, whereas the 3D format is created digitally through computer vision software (Martínez-Navarro et al., 2019). Previously, 3D format was most widely used, however, the 360-degree format is gaining popularity due to the increasingly availability of smartphone enabled headsets and because it is more affordable to create (Martínez-Navarro et al., 2019). In terms of v-commerce, only few studies (e.g. Kim et al., 2014) have made comparisons between the two types of devices, hence, Martínez-Navarro et al., (2019) argued that further research is required to determine which is the most effective in terms of consumer response and whether they perform better than traditional stores.

VR hardware can be defined as the equipment that allows the user to interact within, view and experience VR content (Manis and Choi, 2019; Berg and Vance, 2017). As previously mentioned, the core component of VR hardware is a HMD, and over the years several types of HMDs have been developed and most nowadays have stereoscopic displays, tracking systems, and a wide field of vision (Loureiro et al., 2019). By having gyroscopes and accelerometers, these devices can recognise the user's position and therefore position the scene according to that information (Loureiro et al., 2019). Accompanying accessories for HMDs may include haptic systems such as data gloves with tracking sensors that facilitate interaction (Mizell, Jones, Slater and Spanlang, 2002). The two common types of HMDs include tethered and untethered. Untethered HMDs (e.g. Samsung Gear VR, Google Cardboard, Oculus Rift) are mobile-based and therefore use a mobile device as the display (Tussyadiah et al., 2018).

However, these devices can be limiting due to the mobile devices processing power and limited ability to process real-time 3D content (Tussyadiah et al., 2018). In comparison, tethered VR HMDs require a personal computer (PC) to process the graphics and the user is attached to the PC via a cable (Tussyadiah et al., 2018). Tethered headsets (e.g. HTC Vive, Oculus Rift, and OSVR) deliver superior quality graphics as well as real-time tracking and interaction (Byond, 2016). According to Berg and Vance (2017), interacting with a virtual environment is a core component of many VR applications. The increasing availability of more low-cost HMDs has meant that VR is now more accessible to the consumer market because these devices are more financially affordable (Tussyadiah et al., 2018; Hartl and Berger, 2017; van Kerrebroeck et al., 2017a) and also mobile-based, which is beneficial given that many people already have a mobile device that can display VR content at least to some degree (Hartl and Berger, 2017; Tussyadiah et al., 2018; van Kerrebroeck et al., 2017a; Byond, 2016). The development of newer HMDs designed for personal use (e.g. Oculus Rift and Samsung Gear VR) indicate the potential for mass consumption of VR experiences (Tussyadiah et al., 2016).

A *VR experience* can be defined as an encounter in which the user is effectively immersed in VR content by means of VR hardware (Manis and Choi, 2019). Accordingly, in order to reach this definition Manis and Choi (2019) draw on prior definitions of VR that are more

focused on the user's experience of VR such as Brooks (1999, p. 1) who defined a VR experience as *"any in which the user is effectively immersed in a responsive virtual world"*, and Berg and Vance (2017, p.1) who discussed how VR technology allows users to *"immersively experience a world beyond reality".* Farah et al., (2019) argued that the VR experience is related to the immersive content, which means that content creation becomes a crucial component of the overall experience. Accordingly, well-targeted content that engages all senses could have a much higher sales conversion rate (Farah et al., 2019). The virtual consumer experience is relatively new to the range of consumer experience (Dobrowolski et al., 2014) and has been defined as consumers' psychological and emotional states felt during the interaction with products in a virtual environment (Li et al., 2001). There has been increasing research focused on the VR consumer experience in recent years. Studies have found, for example, that interaction with objects in a VE increases immersion in the virtual world and both social interaction and immersion can positively effect customer satisfaction with the virtual experience (Hudson et al., 2019).

Virtual experiences are also a valuable addition to the experience economy by allowing for existing attractions to be enhanced (Bonetti et al., 2018; Moorhouse et al., 2018), new experiences to be staged, increased accessibility to new and more personalised experiences (Williams and Hobson, 1995), and co-creation of experiences with the tourism provider (Jung and tom Dieck, 2017). Incorporating VR experiences into the tourism sector has also been considered promising in terms of creating emotional connections between destinations and future visitors (Huang et al., 2013). In support of this, Griffin et al., (2017) found that VR helps people generate more positive emotions towards destinations, therefore, VR should be employed by destination marketers to engage and build relationships with potential visitors. Additionally, Hyun and O'Keefe (2012) discuss how VR could contribute to destination image formation, which is further supported by Griffin et al., (2017) who found that VR could have a positive influence on affective and conative elements of destination image in comparison to other forms of media. There are also several benefits for the tourism industry, for example, VR entices consumers to communicate with related brands (Guttentag, 2010) and could therefore be used to create a competitive advantage (Jung and tom Dieck, 2017) leading to new and

increased income (Radde, 2017). For these reasons, it could be argued that VR applications will continue to impact society in general and the tourism and leisure (including retail) industries in particular (Hudson et al., 2019). Therefore, it is important that researchers gain a deeper understanding of consumer experience in virtual settings (Guttentag, 2010) and how the experience affects important marketing outcomes (e.g. satisfaction and loyalty) (Hudson et al., 2019).

3.2.2 VR Immersion and Presence

3.2.2.1 Immersion

A common goal of VR applications is to transport users to a virtual environment and have them experience that environment as if it were for real (Martins et al., 2017), hence, immersion and presence are considered the most distinctive features of VR (Simon and Greitemeyer, 2019; Pizzi et al., 2019; Lee and Chung, 2008). According to researchers, (Suh and Prophet, 2018; Mestre, 2018; Slater and Sanchez-Vives, 2016; Fromberger et al., 2015), *immersion* most commonly refers to the level of technical embedding in terms of the VR system's ability to blur the boundaries between the physical and virtual worlds. The effectiveness of immersion is influenced by how closely the reaction of the VR system mimics the reaction of a real environment (Siegrist et al., 2019). Specifically, the sensory feedbacks of the VR system (e.g. visual, auditory, and haptic) influence the degree of immersion experienced by the user (Siegrist et al., 2019) and higher levels of immersion can enhance the viewer's transfer into the virtual environment (Fontanesi and Renaud, 2014).

On the other hand, Hudson et al., (2019) consider the *subjectively experienced immersion*, rather than the technological definitions identified above. In their study, they draw on prior research (Shin, 2018; Jennett et al., 2008; Carú and Cova, 2006), and argued that the sense of harmony and escape, and being in another world find resonance in the concept of immersion, where the participant feels as though he/she is *"really there",* forgets the outside world and loses his/her sense of time (Hudson et al., 2019, p. 460). In this case, immersion was found to be positively affected by interaction with the VE (Hudson et al., 2019). That is, interaction with objects in the virtual world were found to play an important role in increasing immersion in the virtual surroundings (Hudson et al.,

2019). Indeed, these findings further support the notion that VEs designed with interactive features will lead to more immersive experiences (Sutcliffe, 2016). Specifically, Sutcliffe (2016) asserts that the aspects of exploration and using skills to interact with the environment exist in virtual worlds through the aesthetic and sensorial design of the VE, and by including interactive features enabling the user to explore and control the environment.

Additionally, interaction with the virtual world acts on satisfaction and loyalty through the mediating effect of immersion and social interaction could positively affect customer satisfaction with the VR experience and loyalty (Hudson et al., 2019). Prior research has also indicated that immersion may result in positive effects on satisfaction with the experience as it allows users to better focus on what is in front of them and extend their perception of time (Rudd, Vohs, and Aaker, 2012). Similarly, although van Kerrebroeck et al., (2017a) did not measure immersion directly, their results indirectly suggested that immersion can lead to satisfaction and loyalty in terms of both recommendation and intention to return to a shopping mall through the mechanism of relieving irritation and crowding in the mall experienced before participating in the virtual experience.

3.2.2.2 Presence

The level of immersion influences the feeling of *presence*; hence, presence can be used to measure the immersive effect (Simon and Greitemeyer, 2019; Tussyadiah et al., 2016; Baños et al., 2004). According to Mestre (2018), presence refers to the psychological, perceptions and cognitive consequence of immersion. Specifically, presence can be defined as the subjective experience of *"the sense of being in a virtual environment rather than the place in which the participant's body is actually located"* (Sanchez-Vives and Slater, 2005, p.333). Indeed, it could be argued that the subjectively experienced immersion as discussed by Hudson et al., (2019) aligns more closely with the definitions of presence. Therefore, consistent with prior research (Suh and Prophet, 2018; Mestre, 2018; Slater and Sanchez-Vives, 2016) this study considers immersion to be the technology-aspect of VR and presence as the subjective experience of feeling present in a virtual experience as a result of the VR systems ability to provide the user with a highly immersive experience through multisensory stimuli.

In support of this, Gutiérrez et al., (2008) argued that a sign of presence is when people behave in a VE similarly to how they would behave in a similar real-life situation. Hence, although feelings of presence are naturally subjective and are associated with the user's psychology, it is influenced by the VR system's ability to provide high quality data to the user's senses through immersion (Gutiérrez et al., 2008). Accordingly, presence depends on the sensory depth and breadth of the interface (Steuer, 1992). That is, the information quality within a sensory channel (sensory depth) and the number of sensory dimensions simultaneously experienced (sensory breadth) (Steuer, 1992), which in turn influences its vividness and representational quality (Pizzi et al., 2019). According to Steuer (1992), vividness and interactivity are complementary and the more vivid and interactive a VE is the higher sense of presence it creates.

Previously, Sheridan (1992) identified five variables that induce presence including sensory stimuli, control of sensors, ability to control the physical environment, task difficulty and greater degree of automation. Later, Shubert et al., (2001) divided presence into spatial presence, involvement, and experienced realism. Accordingly, *spatial presence* refers to the feeling of being in a virtual environment, *involvement* refers to the attention for the virtual environment and hence the feeling of participation, and *experienced realism* refers to the user's subjective experience of the virtual experience (Schubert et al., 2001). In the presence literature, Schuemie et al., (2001) argued that the discussion is dominated by presence as transportation, which refers to the feeling of being transported to the virtual environment. According to Kim and Biocca (1997), the key factors of transportation theory are the sense of arrival (i.e. being present in the virtual environment), and the feeling of departure (i.e. the sense of separation from the physical environment). When applied to VR, transportation theory refers to the user's state of being transported into the virtual world (Tussyadiah et al., 2016), which supports that of Schuemie et al., (2001). Indeed, the sense of arrival and the sense of departure are important as they indicate a deeper sense of immersion into the virtual environment and have been found to enhance the sense of reality, increase enjoyment, and generate positive attitudes, beliefs and intentions (Tussyadiah et al., 2016).

Furthermore, Lee (2004) proposed three types of presence including physical presence, social presence and self-presence. *Physical presence* refers to the virtual physical objects experienced as actual physical objects, *social presence* refers to the virtual social actors experienced as actual social actors, and *self-presence* refers to the virtual self/selves experienced as actual self/selves (Lee, 2004). Self-presence aligns with the embodiment, where embodied experiences create the sensation of personally having the VR experience (Shin, 2018). When a user embodies an avatar, they tend to perceive the avatar's actions as his/her own (Shin, 2018; Hofer et al., 2017). According to the theory of human-technology mediation (Ihde, 1990), embodiment refers to situations where the technological device mediates the user's experience and consequently the technology becomes an extension of the human body and helps to interpret, perceive and interact with one's immediate surroundings. Embodiment has recently been related to user experiences with wearable computing (Tussyadiah, 2014; Tussyadiah et al., 2017) given that it plays a key role in creating immersive experiences due to its ability to involve the human senses (Biocca, 1997). Specifically, fully immersive VR equipment offers a sense of embodiment since users see themselves as components of the virtual environment, feeling that the VR devices (HMDs, gloves, etc) belong to their own bodies (Shin, 2017).

Moreover, Hudson et al., (2019) recently argued that interaction with other individuals participating in the virtual space is somewhat understudied and could be a contributor to a good experience. As highlighted in the previous chapter, social interactions are significant to customers in a servicescape (Bitner, 1992). The interaction between customers and service staff and customers and other customers can influence the overall consumer experience in both leisure (including retail) and tourist settings. AR research has indicated that this technology encourages visitors to share their experiences with others (Jung and tom Dieck, 2017). In the urban tourism destination context, Yovcheva et al., (2014) indicated that there is a clear relationship between the physical and the virtual world in the person's whole experience. However, these interactions take place in the real world as opposed to the virtual world, yet with the increase in VR experiences and associated technologies increasingly allowing for interactive VR experiences, it is important to investigate whether these observations are also relevant to VR (Hudson et al., 2019).

Overall, the level of immersion of the VR-system could influence the user's feelings of presence (Bänos et al., 2004), and this sense of presence significantly increases the effectiveness of VR applications (Martins et al., 2017). Arguably, the sense of presence is what sets VR apart from traditional computing interfaces in terms of core differentiation and taking the technology to the next level (Berg and Vance, 2017). More specifically, the use of HMD intensifies the level of immersion because users are immediately isolated from the outside world, which intensifies the virtual experience and perception of presence within the virtual environment (Disztinger et al., 2017) compared with prior technologies. Indeed, the use of immersive technologies is expected to become widespread soon, and with the availability of VR headsets, VR is becoming more accessible to the consumer market (Pizzi et al., 2019). As such, all immersive technologies, including AR and VR are increasingly pervasive in our daily lives, therefore, empirical studies are required to evaluate the effects of truly immersive technology (Suh and Prophet, 2018) and to focus on consumer experiences and behaviours (Pizzi et al., 2019).

3.2.3 VR Multisensory Experiences

3.2.3.1 S-O-R and VR Research

The previous chapter discussed how the S-O-R theory has been applied in traditional, online and mobile retail environments and highlighted that, by comparison, the online and mobile environment lack specific factors experienced in the offline environment (e.g. temperature, odour, texture or people) (Roschk et al., 2017; Loureiro and Roschk, 2014). However, with the evolution of VR technology and its ability to provide multisensory experiences, these same factors may become stimuli for VR settings (Loureiro et al., 2019). Indeed, the delivery of optimal VR experiences requires a realistic multisensory experience that allows for the recreation of the given environment with such fidelity that the user feels transported to the simulated scene (Martins et al., 2017; Slater and Usoh, 1993). More specifically, multisensory experiences in a VE make it easier for the user to visualise and feel incorporated into the virtual world due to the increased sense of presence achieved (Martins et al., 2017), which has motivated industry to try and create VEs that stimulate the majority or all of the five senses (Price, Jewitt, and Brown, 2013).

To date, many virtual environments stimulate only the visual and auditory senses (Martins et al., 2017; Gallace et al., 2012). The visual aspect of VR is generally the most important and most studied sense and has therefore advanced most rapidly (Martins et al., 2017; Gutierrez et al., 2008). A high level of realism can be achieved through visuals and a VE must render an image in 3D and allow it to be seen from any point of view as determined by the user's perspective (Martins et al., 2017; Guttentag, 2010; Gutierrez et al., 2008). This can be achieved through technologies such as HMDs (Martins et al., 2017). Over the years, the quality of rendered images in VR has improved considerably as improvements have been made replicating visual cues such as textures, shadows and transparency (Guttentag, 2010).

In retail and brand marketing, sensory marketers have focused primarily on vision because it leads to higher brand appeal (Yoo and Kim, 2014; Krishna, 2012) and enhancing the visual sense increases imagination and presence (Cowan, Spielmann, Horn, and Griffart, 2017). In the tourism context, 3D images with correct textures, shadows, transparencies and lights can make the destination and site more attractive to visit and improve the overall tourism experiences in the pre-visit phase (Marasco et al., 2018). Additionally, visuals that highlight distinct attractions or present the destination in creative ways prompt a higher level of arousal and heighten the sense of presence in the VE (Tussyadiah et al., 2016). Therefore, it is important to provide aesthetically pleasing imagery and a range of sites that present a positive destination image to potential visitors (Tussyadiah et al., 2016).

Additionally, sound is widely used and can be important for creating realistic VEs (Martins et al., 2017; Gutierrez et al., 2008). Audio displays can be headphones, a single speaker or a full surround sound system with specially located speakers that ensure a 360-degree 3D sound experience (Martins et al., 2017; Berg and Vance, 2017; Guttentag, 2010). High quality audio and spatial qualities to the sound is important as it allows the user to perceive an external sound stage from which the sound is emitted (Guttentag, 2010). Additionally, interactions and other distractions must be limited so that users can detach from reality and do not have to remain conscious of surrounding elements (Tussyadiah et al., 2016). The advent of realistic and affordable immersive audio-visual reproduction

systems (e.g. HMDs), backed by increasingly efficient and realistic acoustic simulation (Vorländer, 2008) has been identified as a key enabling technology for VR soundscape. According to prior research, music in VR influences consumers' physiological responses through vividness and volume, and also enhances cognitive and emotional involvement via tone, brand congruity and attention (Cuny, Fornerino, and Helme-Guizon, 2015; Richard, 2005; Zentner, Grandjean, and Scherer, 2008).

Although not widely used in VEs due to technological limitations associated with integration, scent (i.e. olfactory) is another sensory stimulus that is often regarded as one of the least important senses (Martins et al., 2017; Guttentag, 2010). Olfactory stimulation is typically achieved with olfactory displays that spray certain smells or smell combinations at a particular target or area (Gutierrez et al., 2008; Washburn and Jones, 2004). Creating realistic scent is challenging, as well as ensuring one scent is removed before another scent is introduced, and accounting for the varying olfactory capabilities of different individuals (Washburn and Jones, 2004). Therefore, only few studies have used this stimulus for training (Washburn et al., 2016) and therapy purposes (Chen, 2006). For instance, earlier studies have found that using scent in the VE could increase the user's sense of presence (Dinh et al., 1999; Zybura and Eskeland, 1999). In support of this, Tomono, Kanda and Otake (2011) stated that in VR, smells can also increase product focus and enhance awareness and memorability of product features due to heightened immersivity and therefore presence. As highlighted in the previous chapter, scent is an important component influencing emotions, cognitive response and behaviour in retail environments (Kim and Shin 2017; Berkhout et al., 2016; Kim et al., 2007; Donovan and Rossiter, 1982). In this case, scent is often purposefully designed to capture consumers attention (Dubois, 2000), and could therefore be an important component for effective VR marketing applications.

Moreover, in order to facilitate naturalistic interaction with virtual objects, the user needs a means of manual control (Meibner et al., 2019). This can be achieved in numerous ways such as analysing hand gestures or by tracking the user's position and orientation in the room (Meibner et al., 2019). However, Guttentag (2010) argued that tactile sensations (i.e. touch) are more complicated to replicate than visuals and sound because

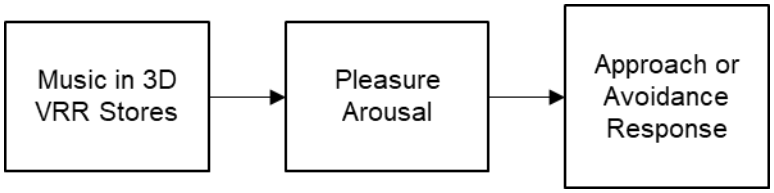
the sense of touch involves complex mechanisms of the nervous system. In virtual environments, tactile environmental conditions may be a complex set of stimuli, combining temperature, humidity, and wind features (Martins et al., 2017). Studies have made progress in recreating certain tactile sensations such as vibrations, which could be generated in a variety of ways and are already widely used in video games (Guttentag, 2010). Other systems include using air conditioning systems to recreate environmental temperatures, fans to recreate the wind, and humidifiers to deliver the environmental humidity (Martins et al., 2017). Additionally, haptic devices have been developed in the form of gloves, but sometimes covering a user's entire arm or body, provide the user with force feedback, which is felt as a very general tactile sensation (e.g. using a haptic device to touch an object is like touching an object with a stick) (Gutierrez et al., 2008; Vince, 2004). Guttentag (2010) previously argued that there are few difficulties with regards to creating virtual tactile sensations that will be challenging to overcome and are a limitation of many VR systems. Since then, the realism of interaction has improved with technological developments (e.g. improved computer graphics and faster processor speed), however, it is clear that VR remains distinguishable from physical reality and the limited realism of interaction can still be perceived as a disadvantage of the VR environment (Meibner et al., 2019).

Overall, research has clarified that the combination of stimulating sound and visual senses in the virtual environment could lead to complete absorption and escapism into the virtual world (Jung et al., 2017). However, it is known that human beings perceive the physical environment through the five senses, which means that it is critical to include additional senses in the virtual environment to create a compelling, realistic multisensory environment (Martins et al., 2017; Gallace et al., 2012). Indeed, a VR system's ability to stimulate different senses effectively would have varying importance depending on how the system is being used (Guttentag, 2010) in terms of contextualisation. For instance, in terms of VR retail stores, tactile and olfactory senses could contribute to a realistic VR experience, while gustatory (i.e. taste) has been found to be more useful for food simulation (see for example, Hashimoto et al., 2006, 2008; Iwata et al., 2004). Overall, VR environments that better replicate the real environment are more effective for marketing (Martins et al., 2017). Therefore, it is becoming increasingly important to

simulate additional context-specific senses to generate a more realistic VR experiences where users behave as they would in a real environment.

Given that S-O-R theory has been validated in e-commerce and m-commerce settings as highlighted in the previous chapter, Kim et al., (2018) argued that this theory may be a useful framework to explore the factors associated with VR. To date, several studies have emerged investigating VR as an experiential marketing tool using S-O-R theory as a theoretical foundation. For example, employing S-O-R theory, Dad et al., (2018) proposed a conceptual, expanded 3D servicescape model proposing that a 3D VRR (i.e. 3D VR retail store) environment consists of physical, social, socially symbolic and natural dimensions. More recently, the authors focused on the influence of a specific atmospheric cue (music) of 3D VRR stores and found that music significantly increases shoppers' arousal levels, which increases shoppers' pleasure levels, and then their approach behaviour in this specific context (see Figure ***3.3***) (Dad et al., (2018).

Figure 3.3 Conceptual Model to Investigate the Effect on Shoppers' behaviour in 3D VRR Stores

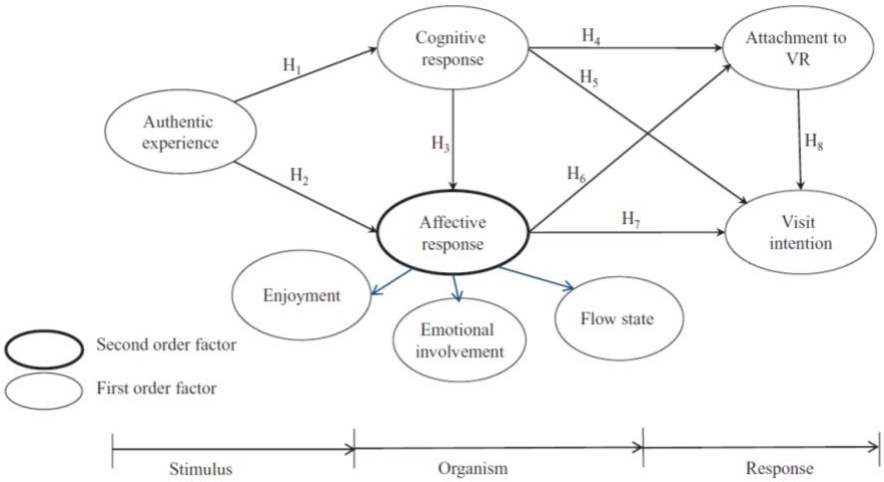


(Source: Dad et al., 2018)

In the tourism literature, Kim et al., (2018) recently proposed a conceptual, extended S-O-R model, indicating the importance of authentic experience in VR tourism given its impact on cognitive and affective responses (see Figure ***3.4***). According to the model, cognitive and affective responses act as mediators between authentic experience and attachment to VR and visit intention, and attachment to VR influences tourist's intention to visit places viewed in VR (Kim et al., 2018). Specifically, this study revealed that

cognitive response has a stronger influence on intention to visit the destination viewed in VR than affective response (Kim et al., 2018).

Figure 3.4 Proposed Conceptual Model in Tourism Context



(Source: Kim et al., 2018)

3.3 Virtual Reality and Experiential Marketing in an Urban Shopping Destination Context

VR is an attractive technology for marketers because it provides an environment where users can retrieve information in multisensory modalities (Slater and Usoh, 1993). The advances associated with VR technologies have enabled their use in several business sectors including entertainment, design, and in tourism-related activities (Martins et al., 2017; Guttentag, 2010). In the field of psychology, research has sought to explain the reason behind the effectiveness of VR in shaping attitudinal and behavioural responses to virtual stimuli (Scheumie et al., 2001), with most of these studies focusing on the concept of presence (Tussyadiah et al., 2018). Additionally, empirical evidence from various fields including education, healthcare, entertainment and retailing demonstrate that a VR experience could lead to positive attitudinal and behavioural outcomes (Suh and Lee, 2005). However, research on the suitability of VR as a market research tool is still fragmented and lacks consensus on VR's effectiveness in replicating more

established research tools (Pizzi et al., 2019). Additionally, although more brands are using VR technologies to connect with consumers (Clark, 2017), Cowan and Ketron (2019) argued that little is understood about how they should use VR to engage consumers. Therefore, further research is required to determine whether brands should use VR to create relationships or sell offerings, and how brands can facilitate sales or engagement using this technology (Cowan and Ketron, 2019).

3.3.1 VR and Retail Marketing

Virtual environments have flourished in the last decade as a way to elicit new and exciting consumer experiences as technological innovation allowed marketers to use such advancements in commercial applications (Loureiro et al., 2019). VR is useful for brands because it allows consumers to view a different, virtual dimension, providing substantial potential for both selling products and creating consumer-brand relationships (Cowan and Ketron, 2019). In retailing, VR will likely impact the way shoppers, brands and retailers behave (Bonetti et al., 2018). In order to keep up with the fast pace of technological advances, physical retailers are increasingly testing the potential of VR integration into the shopping journey in order to sustain current market share and seize new opportunities (Bonetti et al., 2018). In 2017, the retail VR market was predicted to rise to $41.5 billion by 2020 (Blum, 2017).

Previously, Bigné et al., (2016) argued there is limited attention in the marketing literature on virtual retailing (Pantano and Laria, 2012), as researchers continue to investigate online retailing and advertising. Since then, several studies have emerged focusing on virtual retailing (e.g. Pizzi et al., 2019; Farah et al., 2019; Martínez-Navarro et al., 2019; Dad et al., 2019; Schnack et al., 2018). These researchers have largely focused on 3D VRR stores that provide new and innovative ways of shopping and provide abundant opportunities for both retailers and shoppers (Vrechopoulos et al., 2009). In VRR stores, it is now possible for users to explore a virtual shop in VR by, for example, walking, grasping a virtual apple from a virtual shelf, and putting the apple into the virtual basket (Siegrist et al., 2019). As a result, the shopping experiences in VR are more aligned with actual, physical experiences (van Herpen et al., 2016). Although VRR stores can be found in Virtual Worlds (VWs) (e.g. Second Life) (Dad et al., 2016), the next step under

investigation is consumers buying products in VRR stores for their real lives as previously suggested by Vrechopoulous et al., (2009). Studies focusing on VRR stores have provided supportive results for the benefits of this technology for retailers, consumers and researchers. For instance, from the consumer perspective, Pizzi et al., (2019) recently explored the existence and the effects of shopping orientation in a VR-based store.

Accordingly, shopping orientation refers to consumers approach to shopping whether it is experiential (i.e. hedonic) where consumers seek pleasure while shopping, or task-focused (i.e. utilitarian) where shopping is viewed as a task to be completed as efficiently as possible (Kaltcheva and Weitz, 2006; Babin et al., 1994). The researchers concluded consumers' shopping orientations (utilitarian and hedonic) are affected by the virtual channel, which can lead to both utilitarianism (i.e. purchases driven by efficiency and rationality, Chaudhuri et al., 2010) and hedonism (i.e. tendency to enjoy spending time shopping, Holbrook and Hirschman, 1982) (Pizzi et al., 2019). Consequently, hedonism and utilitarianism lead to store satisfaction, and although hedonism is more present than utilitarianism, the relationship is stronger between utilitarianism and store satisfaction (Pizzi et al., 2019). Further, Schnack et al., (2018) compared perceived telepresence and usability between an immersive 3D simulated store and a Virtual Simulated Store (VSS) on a conventional desktop computer in the grocery store context. Their study found that VR grocery stores increase perceived presence compared with desktop computer virtual grocery stores, and the presentation of visual cues and interactivity with the virtual environment leads to increased immersion.

For retailers, early research suggested that VR could play a role in enabling them to effectively test alternative shelf layouts in terms of enabling retailers to obtain faster results, a higher level of control over the environment and more flexibility in the manipulation of shelf layout (Needel, 1998). More recently, Li and Meshkova (2013) examined whether the increased realism of a virtual store compared to pictorial (2D) stimuli elicits consumer behaviour that is more in line with behaviour in a physical store. The results indicated that VR can improve realism in responses to shelf allocation, which seems to make these tools promising for use in the retail context (Li and Meshkova, 2013). Additionally, VR could provide an advanced and enriched sales method that offers

more products than physical stores in settings similar to e-commerce and provide the potential integration of other communication tools such as traditional advertising, online media and electronic-WOM (eWOM) (Fang et al., 2014; Papagiannidis et al., 2014). Additionally, VR could influence purchasing decisions by providing real interaction with products, the ability to view them in a realistic way and to request personalised information likely to influence purchasing decisions (Fang et al., 2014; Papagiannidis et al., 2014).

Nowadays, industry adoption of VR is flourishing, and a growing number of organisations are integrating VR-elements into their marketing strategy (Griffin et al., 2017). More specifically, marketing practitioners are starting to experiment with VR in experience marketing because it provides marketers with new, creative and innovative ways to market their products and services to prospective consumers (Adams, 2016; van Kerrebroeck et al., 2017a). Both brands (e.g. Volvo and L'Oréal) and retailers (e.g. Carrefour and Lowe's) have introduced on-site VR facilities (Berg and Vance, 2017; Vrechopoulos et al., 2009). For example, Adidas provided a VR experience featuring NBA-player James Harden in their flagship store in New York (Alvares, 2016), providing an example of sociability in VR. Topshop launched a VR experience in its flagship store in London, which allowed consumers to ride a virtual water slide through a recognizable Oxford Street. In such use cases, the visual and sound sensory experiences may play the most important role in enhancing the experience and having the customer experience the virtual environment as if it were for real.

In e-commerce, Chinese company Alibaba previously explored opportunities for VR shopping by creating a virtual store "Buy+", that allows consumers to navigate through the virtual store and closely examine 3D products. More recently, Alibaba have implemented a payment function, which allows consumers to make real-time payments in the virtual store as if they were shopping in the physical store. Hence, interactivity with regard to handling the merchandise and navigating the virtual store plays an important role in enhancing the user experience in such VR retail applications. Similarly, retailers such as John Lewis and IKEA are experimenting with VR for at-home use. For example, IKEA have created an interactive VR showroom allowing for new ways of exploration and visualisation of 3D product experiences (IKEA, 2019). John Lewis have taken a similar

approach with its application “Visualise Your Space”, which maps the dimensions of the user’s room and allows them to design an interior look by changing the colours of walls and floors, and inserting John Lewis products that they can later buy (Williams, 2019). By allowing users to take control and design their own room with the retailer’s products, both these examples emphasise the importance of interactivity and generating high-quality visual representations for VR retail applications designed for at-home use. Overall, these examples demonstrate the opportunities of VR in generating more interactive advertising campaigns in line with experience marketing. According to Mann et al., (2015) these VR experiences provide more appealing shopping experiences than traditional environments.

3.3.2 VR and Marketing Urban Tourism Destinations

In the travel and tourism literature, VR has long been anticipated (e.g. Cheong, 1995; Guttentag, 2010) and is a growing topic of interest among practitioners and academics alike (Griffin et al., 2017). The use of VR in tourism marketing lies primarily in its ability to provide extensive sensory information to prospective visitors (Guttentag, 2010). For instance, destination marketers could integrate VR sensory experiences into their communication strategy, utilising their experience-based internet marketing to support visitors search and decision-making process (Abou-Shouk et al., 2012; Cheng and Cho, 2011; Gretzel and Fesenmaier, 2003). In response to the growing trend of experiential marketing, Williams (2006) previously suggested that VR technologies incorporating multisensory media assist tourism marketers with creating memorable experiences that integrate meaning, perception, consumption and brand loyalty. In support of this, Guttentag (2010) later argued that the experiential nature of VR makes it an optimal tool for providing rich data to potential visitors seeking destination information. Indeed, visitors could make better informed decisions and have more realistic expectations, which could lead to a more satisfactory trip (Cheong, 1995; Hobson and Williams, 1995).

For several years, many hotels and tourism operators have been using VR-type marketing such as virtual tours (Cho et al., 2002; Wan et al., 2007). However, although they still reveal an interest in VR-type technologies these virtual tours are not genuine VR, as they only provide panoramic photographs of the hotel or destination and do not permit any free navigation (Guttentag, 2010). Earlier research provides evidence that

visiting tourism destinations in VR could encourage behavioural intentions in the form of real visitation (Guttentag, 2010). For example, Wan et al., (2007) found that virtual experiences are more effective advertising tools than brochures for theme parks and natural parks, while in a hotel context, Lee and Oh (2007) found that virtual visitors on a hotel website could provide psychological relief to individuals feeling travel anxiety.

More recently, the most evident applications for VR in the tourism sphere are marketing, entertainment, education, tourism policy planning and cultural preservation (Martins et al., 2017; Guttentag, 2010). In terms of destination marketing, VR provides opportunities for destination marketers to communicate intangible tourism experiences to a wider audience by offering a rich environment for potential visitors to explore tourism destinations prior to visiting (Huang et al., 2016; Griffin et al., 2017). More specifically, tourism providers can utilise VR as an innovative marketing tool to promote their services to prospective visitors and provide them with new ways of browsing, where they can "feel and experience" the destination as opposed to browsing through traditional media such as print or electronic catalogues (Disztinger et al., 2017, p. 256). As a result, visitors are provided a subjective experience where virtual stimuli such as taking a virtual trip through destinations such as tourist cities or national parks anywhere at any time (Tussyadiah et al., 2016; Fauzi and Gozali, 2015). This technology allows for a more realistic insight into the destination's distinct attributes and consequently, visitor engagement increases which potentially influences actual behaviour in the form of real visitation to a certain place (Jung et al., 2017; Tussyadiah et al., 2016). Studies have also suggested that the subjective experience of presence in VR can translate into real world attitude and induce behavioural change (Fox, Christy, and Vang, 2014). For instance, Tussyadiah et al., (2017) indicated that the immersive nature of VR experiences generates positive attitudes and behavioural responses. Few examples of industry experimentation with this technology is travel operators (e.g. TUI) and hoteliers (e.g. Marriott International) who have implemented VR to allow consumers to visit a specific destination or hotel, or even experience a lifestyle associated with a brand (e.g. The North Face) (Mandelbaum, 2015).

Previously, VR was predicted to have a significant impact on the tourism sector while providing abundant opportunities for both professionals and researchers in the field

(Guttentag, 2010). Since then, it appears that the number of both VR-tourism and VR-retail related publications and industry use cases has grown significantly, and the economic impact of the VR and AR industry is set to continue this pace in the coming years with a forecast of 29.5 billion U.S. dollars by 2020 (Statista, 2017). Given its anticipated impact on the tourism sector (Guttentag, 2010), further research is needed to gain a deeper understanding of the implications and opportunities of VR for tourism marketers (Griffin et al., 2017). Although a growing number of organisations are integrating VR into their marketing strategy, there is limited empirical research on the use of VR technology for businesses, and destinations more broadly (Griffin et al., 2017). Additionally, VR has attracted the interest of many researchers and retailers (Glazer et al., 2017) and it is evident that VR will impact the retail landscape, therefore, it is imperative to assess the viability of VR in the retail business (Farah et al., 2019) and its impact on physical and online retail environments. Finally, as VR faces some barriers because users are not yet accustomed to wearing HMDs, and many visitors are unaware of its potential beyond gaming (McKone et al., 2016), marketing researchers must strive to understand visitors' intrinsic motivations toward using VR, its usefulness and enjoyment factor (Disztinger et al., 2017; Beck and Crié, 2018).

3.4 Models of Technology Adoption

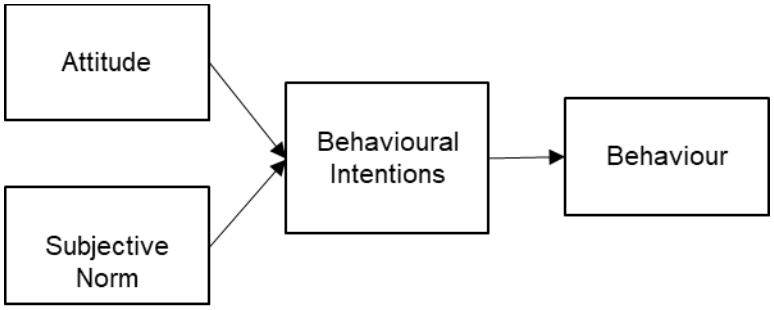
Furthermore, as technology continues to be integrated into people's everyday lives, there is an increasing interest in the research community in addressing why people accept or reject new technologies, and as a result, several theories and models of technology adoption and its effective usage have been developed (Marangunic and Granic, 2014). Initially, theories began grounded in the field of psychology (e.g. Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)). However, research has since expanded into various disciplines since technology has become widespread throughout society. In the technology adoption literature, there are eight prominent models including the Technology Acceptance Model (TAM) (Davis, 1989), TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980), TPB (Ajzen, 1985, 1991), Combined TAM and TPB (Taylor and Todd, 1995), Motivational Model (MM) (Davis et al., 1992), Model of PC Utilisation (MPCU) (Thompson and Higgins, 1991), Social Cognitive Theory (SCT) (Bandura, 1986) and Diffusion of Innovation Theory (DOI) (Rogers, 1962, 2003) (Venkatesh et al., 2003).

The TAM has been adapted numerous times resulting in the TAM 2 and TAM 3, and Venkatesh et al., (2003) combined the eight prominent models and proposed the Unified Theory of Technology Acceptance and Usage of Technology (UTAUT). While a thorough review of each of the theories is not within the scope of this research, the constructs and a brief description of the reviewed models can be found in the appendix (see 12.4). The following section focuses on the foundations of the TAM and discusses how it was developed from the TRA and TPB, respectively.

3.4.1 Theory of Reasoned Action

The TRA (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) is a versatile behavioural theory that is useful in explaining and predicting an individual's actual behaviour (Chuttur, 2009). The model (see Figure ***3.5***) assumes that individuals would use technologies dependent on whether they could see positive benefits of using them (Samaradiwakara and Gunawardena, 2014). More specifically, the TRA suggests that a person's behaviour is determined by their intention to perform the behaviour (Fishbein and Ajzen, 1975). The intention is a function of their attitude toward the behaviour and subjective norms, which is concerned with the perception of those people important to the individual (e.g. family and friends) regarding whether the individual should perform the intended behaviour or not (Chuttur, 2009; Fishbein and Ajzen, 1975). Accordingly, the influence of the attitude on the behaviour is mediated through the intention (Marangunic and Granic, 2014). The TRA was the first theoretical perspective to gain attention and acceptance in technology adoption research and has since been modified and extended as scholars have identified new variables (Samaradiwakara and Gunawardena, 2014).

Figure 3.5. Theory of Reasoned Action (TRA)



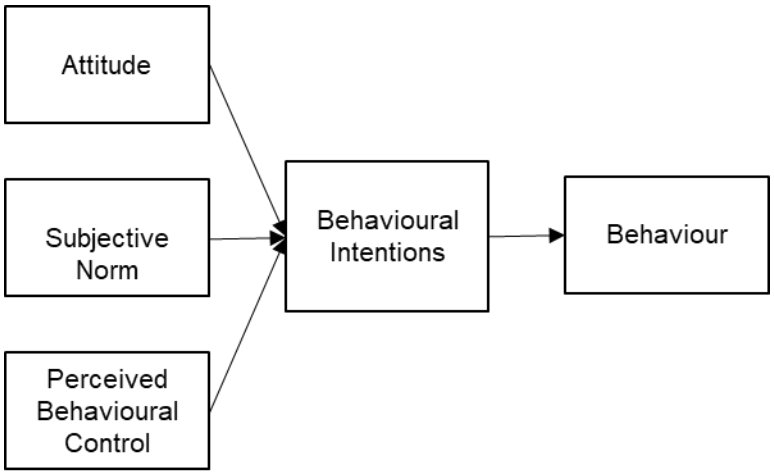
(Source: Fishbein and Ajzen, 1975)

However, as the TRA began to be used in social science research, it became clear that the theory was not adequate and had numerous limitations (Marangunic and Granic, 2014). In his research, Ajzen identified that one main limitation of the TRA is concerned with people that feel they have no control over their behaviours and attitudes, as the TRA describes the behaviours and attitudes as being on a continuum from little control to great control (Marangunic and Granic, 2014). Therefore, Ajzen adapted the TRA by adding a dimension of perceived behavioural control, which resulted in the development of the TPB. The aim of the added dimension was to help with the prediction of behaviours that individuals do not have complete volitional control over (Beck and Ajzen, 1991).

3.4.2 Theory of Planned Behaviour

Therefore, the TPB (Ajzen, 1985, 1991) is an extension of the TRA, and was developed to inform the inadequacies found in research using the TRA, namely the volitional control and the over reliance of intentions on predicting behaviour. The TPB assumes that the individual's behaviour is determined by their intention to perform the behaviour (see Figure 3.6). According to Ajzen (1991, p.181) *"intentions are assumed to capture the motivational factors that influence a behaviour; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behaviour".* Intention is an antecedent of actual behaviour and consists of three conceptually independent determinants (attitude, subjective norm and perceived behavioural control) (Beck and Ajzen, 1991). As previously mentioned, attitude refers to the favourable or unfavourable evaluation of the behaviour, subjective norm refers to the social pressure to perform or not perform the behaviour, and perceived behavioural control refers to the perceived ease of use to perform the behaviour, taking into consideration the individual's relevant skills, resources and other prerequisites needed to carry out the behaviour (Beck and Ajzen, 1991). Therefore, the more favourable the attitude and subjective norm toward the behaviour, and the greater the perceived behavioural control, the greater the intention to perform the behaviour should be.

Figure 3.6. Theory of Planned Behaviour (TPB)



(Source: Ajzen, 1985, 1991)

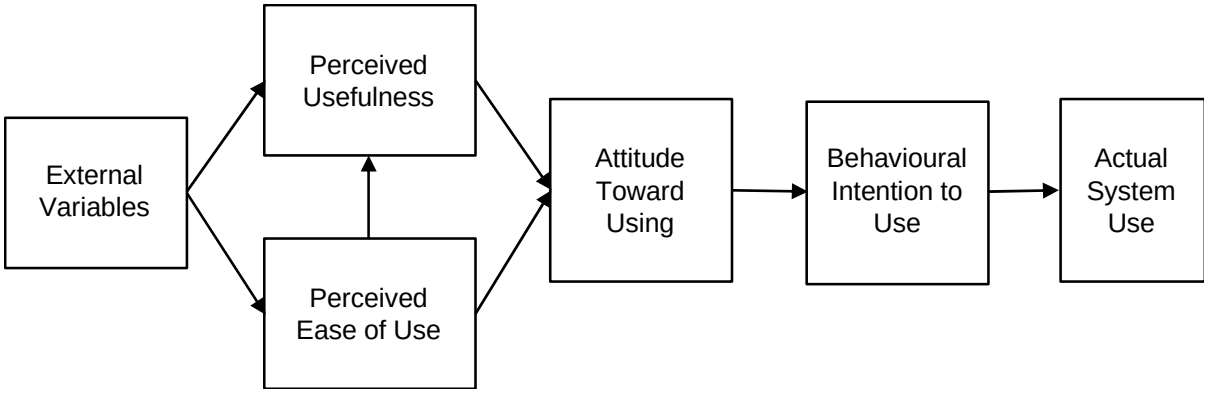
The TPB has a number of limitations. For instance, the TPB assumes that perceived behavioural control predicts actual behavioural control, however, this may not always be the case, and it does not consider factors such as demographics and personality (Marangunic and Granic, 2014). Although the TRA and TPB are useful models in explaining and predicting the actual behaviour of an individual, much research adopting the models did not produce reliable measures to explain the acceptance or rejection of technologies (Marangunic and Granic, 2014). Having said that, the TPB has significantly improved predictive validity compared with the TRA (Beck and Ajzen, 1991). Nevertheless, both the TRA and TPB have been subject to modifications over the years that aim to improve the model's validity and applicability to different contexts by changing existing variables and adding new variables. The most widely known adaptation was by Davis (1989), whom adopted the two models to develop a more valid model to understand and predict the user's decisions regarding technology acceptance or rejection (Marangunic and Granic, 2014).

3.4.3 Technology Acceptance Model

In developing the TAM, the two key changes Davis made to the TRA was that he did not consider subjective norm in predicting the actual behaviour of a person, as he suggested that the authors of the TRA stated that this aspect had uncertain theoretical status, hence, the TAM only considers the attitude toward the behaviour (Chuttur, 2009). Additionally, rather than considering several individual salient beliefs in predicting an individual's attitude toward a behaviour, the TAM considers two distinct beliefs: perceived usefulness and perceived ease of use (Chuttur, 2009). Davis (1989) suggested that the two variables are sufficient in predicting the attitude of a user toward the actual use of a technology. The TAM assumes that the perceived usefulness and perceived ease of use determine the individual's attitude toward using the technology (Huang et al., 2016) (see Figure ***3.7***). Davis (1989, p.320) defined perceived usefulness as *"the degree to which a person believes that using a particular system would enhance his or her job performance",* and perceived ease of use as *"the degree to which a person believes that using a particular system would be free of effort"* (Davis, 1989, p.320). The final version of the TAM was

developed by Venkatesh and Davis (1996) following a main finding that both perceived usefulness and perceived ease of use have a direct influence on behavioural intention to use, which eliminates the need for the attitude construct.

Figure 3.7. Technology Acceptance Model (TAM)



(Source: Davis, 1989)

Since the initial TAM was developed an extensive amount of research dealing with the TAM has emerged and it continues to be used in recent studies as opposed to the models later modifications (i.e. TAM2 and TAM3), which indicated the theory's popularity in the field of technology acceptance (Marangunic and Granic, 2014; Miltgen et al., 2013). Research in the field of consumer behaviour and information technology usage has confirmed that both perceived usefulness and perceived ease of use are related to technology acceptance, as well as the user's motivations and behavioural intentions (Huang et al., 2016). Likewise, the TAM has been used extensively in the tourism literature and studies have confirmed its explanatory power (e.g. Disztinger et al., 2017; Rese et al., 2016). The TAM is considered a time and cost-effective way to gather information, however, Chuttur (2009) stated that this may have led to scholars to conduct quick and easy research, which limits the thoroughness needed to fully understand why people accept or reject technology.

The TAM has been applied to emergent technology research. For instance, Rese et al., (2016) applied the TAM to measure consumer/user acceptance of AR applications in

marketing and retailing, and the findings confirmed that the TAM is a robust model for AR applications in this specific context. Another study investigating destination travel intentions in a web context stated that the feature of perceived usefulness in web-based tourism was a significant predictor of intention to travel to the destination (Kaplanidou and Vogt, 2006). Huang et al., (2013) studied the applicability of the TAM in the context of tourism marketing in 3D virtual worlds and found that perceived usefulness and perceived ease of use are antecedents of consumers' travel intentions to develop consideration and awareness in destination choice making. Importantly, in the context of e-tourism, Ukpabi and Karjaluoto (2017) reviewed studies on consumers' acceptance or adoption with an aim to synthesise the theories, models and frameworks employed. Their results showed that of the 71 reviewed articles using 28 different theories, models and frameworks mainly from technology adoption and social and psychological adoption paradigms, of which the TAM model was the most used, appearing in 33% of the studies (24 of 71 studies) (Ukpabi and Karjaluoto, 2017).

The TAM has also been employed to explore VR in tourism (e.g. VR for trip planning, Disztinger et al., 2017) and retailing (e.g. intention to shop in virtual worlds, Domina et al., 2012). For instance, Disztinger (2017) and his colleagues adopted the TAM to understand the acceptance of VR technology as a travel planning tool. Their research confirmed that the perceived usefulness of VR influences visitors' behavioural intentions, while the perceived ease of use does not. Drawing on previous literature, the authors added several dimensions to the TAM such as perceived enjoyment, personal anxiety, perceived immersion and technology anxiety, of which perceived immersion was found to be a valid predictor of behavioural intentions, and the intensity of the immersion increased the intention to use and consequent acceptance of VR (Disztinger et al., 2017). Disztinger et al., (2017) argued that the acceptance of VR technology has significantly improved, however, further investigation is required into its usefulness and enjoyment factors, as well as advanced technical upgrades for it to achieve mass-market acceptance.

3.5 Summary

The aim of this chapter was to provide a more in-depth discussion on immersive technologies, specifically VR, and demonstrate its impact on the urban place marketing

sector. This was achieved by drawing on retail marketing and tourism marketing research in order to inform the urban shopping destination context. The chapter highlighted several key components of immersive VR experience, namely presence and immersion, and demonstrated how these components are more powerful in VR than prior marketing technologies. Additionally, VR provides more realistic multisensory experience than prior 2D technologies and retail platforms, which means that it could be an ideal tool for experiential marketing. Consequently, VR has received increasing attention over recent years from both researchers and marketing practitioners, which is evident by the examples of use cases provided in this discussion. Therefore, various researchers (Hudson et al., 2019; Guttentag, 2010) have called for further research on VR, specifically, the consumer experience and how they behave in VR largely as a result of the increased sense of presence and multisensory cues, and how the experience affects marketing outcomes. Indeed, researchers (Kim et al., 2018; Dad et al., 2018) have already begun to apply S-O-R theory to VR retail and tourism research given its proven validity in research focusing on prior retailing channels (e.g. e-commerce and m-commerce).

However, S-O-R and VR research is still in its infancy by comparison to e-commerce and m-commerce, and further studies are required to deepen our understanding on the various VR retail atmospheric variables that influence human behaviour in VR. Technology adoption research could provide valuable insights into why humans adopt or reject new technologies and therefore it is useful to draw on this stream of research when exploring emergent technology adoption such as VR. Importantly, VR research is largely still in its infancy and this technology is not widely accepted in society yet, which means that people's willingness to use it could be associated with key components of technology adoption theories associated with usability (e.g. perceived ease of use and perceived usefulness). Although the TAM is widely used in various disciplines, its application to VR research is limited and given that this model is well-validated, it could potentially provide a useful theoretical addition to S-O-R theory when investigating visitors behavioural response to VR retail environment cues. Specifically, the following section provides a synthesis of the literature so far and provides a more in-depth justification of the employed theories.

Chapter 4 – Literature Synthesis

4.1 Introduction

The purpose of this chapter is to provide a synthesis of the literature streams that were critically analysed in the previous chapters. By identifying, comparing and contrasting key concepts and themes from the literature findings, this chapter draws conclusions on how the findings address the research aim and objectives and how the common themes inform the empirical aspect of this research. In terms of scoping the literature, the previous chapter provided a parallel research by reviewing urban place marketing, traditional, e-commerce and m-commerce retailing, followed by an exploration of VR and technology adoption literature. The aim of this chapter is to refine the specific commonalities and gaps for further research of these prior findings in the context of VR and urban shopping destinations. First, S-O-R theory is discussed, and a justification provided for its adoption in this study, then the key research streams identified in the previous literature chapter are presented.

4.2 S-O-R Theory

The S-O-R theory has provided a basis for theoretical framework development in several disciplines such as environmental psychology (e.g. Baker et al., 1992; Morrison et al., 2011), marketing (e.g. Wu and Li, 2018; Penz and Hogg, 2011), emerging technologies including VR (e.g. Kim et al., 2018), e-commerce (Krasonikolakis et al., 2018; Prashar et al., 2017; Eroglu et al., 2001, 2003) and m-commerce (e.g. Lee, 2018; Huang, 2017; Sahoo and Pillai, 2017) research. Some tourism studies have been conducted on visitor behaviour using the S-O-R theory (e.g. Jani and Han, 2015; Jang and Namkung, 2009; Kim and Moon, 2009) and in this context, researchers have found it to be a highly effective theory in explaining the relationships among stimuli (e.g. hotel ambience), organism (e.g. emotions) and response (e.g. hotel loyalty) (Jani and Han, 2015). As previously discussed, many of the studies investigating the influence of retail store environment cues on consumers' emotional states and shopping behaviour adopt S-O-R theory (Mehrabian and Russell, 1974).

The S-O-R theory has broadly predicted user behaviour when using ICTs and in the context of immersive technologies it has been applied to consumer behaviour in VR (Kim et al., 2018), effects of music on shoppers behaviour in VR retail stores (Dad et al., 2018), impulse buying behaviour in a mobile auction (Chen and Yao, 2018), customer engagement with online brand community characteristics (Islam and Rahman, 2017), consumer behaviour in 3D online stores (Krasonikolakis et al., 2018), online shopping values and website cues on purchase behaviour (Prashar et al., 2017), and customer loyalty in social commerce (Wu and Li, 2018). Although VR has demonstrated its capability and potential as a useful marketing tool, more theoretical studies on VR consumer behaviour are necessary (Kim et al., 2018) in order to identify those factors that encourage potential visitors to visit urban shopping destinations. Therefore, in this study, the S-O-R model will be adapted to investigate the influence of VR retail environment cues on shopper's behaviour in the context of urban shopping destinations.

More specifically, the rationale for adapting the S-O-R model to the VR retailing context is because previous studies have provided substantial evidence on its suitability as a theoretical framework to investigate the effects of various physical and virtual (online/mobile) retail environment cues on human behaviour through the mediating variables of affective and cognitive states. The model is also useful in measuring possible emotional responses and empirically claims that it can measure the effect of various retail environments on human behaviour. Therefore, on these bases it is assumed that the S-O-R theory would be appropriate to measure the effects of various VR retail environment cues on shoppers' behaviour mediated by their internal response in the context of urban shopping destinations.

4.3 Key Research Streams

As discussed in the literature review, there is a plethora of research into bricks and mortar retailing, as well as online and mobile retailing, although notably, m-commerce and urban shopping environment research is lesser in comparison to both in-store and online retailing. This is even more apparent in research into VR retail environments, and although virtual worlds and VRR stores have existed for over a decade, research is arguably still in its infancy, and more systematic research on the nature of VR retail using

established retailing and consumer behaviour theories is warranted (Hassouneh and Brengman, 2015; Krasonikolakis et al., 2011). From critically reviewing the literature in these areas, it is clear that each of the research streams share similar themes with regard to the effects of retail environment cues on shoppers' behaviour, which could be applied to this emerging area of VR retail research. Therefore, this study aims to extend the established retailing and consumer behaviour theories into the VR retail context in order to deepen the understanding of the influence VR retail environment cues have on shopper's behaviour.

More specifically, the main research questions derived from the reviewed literature included, 1) To what extent do traditional retailing theories apply to VR retail environments in the urban shopping destination context? 2) What, if any, is the effect of specific VR retail environment cues on visitors' internal states (affective and cognitive) and behavioural intentions (approach/avoidance) in the context of urban shopping destinations? It was anticipated that by attempting to address these questions and establishing what is already known in the literature then the areas requiring further investigation would become clear.

4.3.1 Physical Retail Environment Research

From reviewing the literature, it is clear that *atmospheric* factors remain the most important aspect of retail environment research influencing shoppers experience in both offline and online shopping environments. This study employs the definition of atmospherics by Kotler (1973-1974) outlined in a previous chapter (see Chapter 2, section 2.3.1.1). Studies have focused on specific environment cues in physical retailing such as the effects of in-store lighting on customer satisfaction (Reddy et al., 2011), music and aroma on shopper behaviour and satisfaction (Morrison et al., 2011), and colour and lighting on retail impression and identity (Tantanatewin and Ikarojit, 2016). In physical retail environments, the visual aspect entails the design of the physical surroundings, which affects intention and willingness to re-visit and recommend the store to others, for example (Wakefield and Blodgett, 2016). Additionally, effective design has been found to increase time spent, desire to return and purchase, and is fundamental to maximize sales

and profitability (Wakefield and Blodgett, 2016; Timothy, 2005; Stoel et al., 2004; McGoldrick, 2002) and is therefore an important consideration of any retail environment.

Additionally, ambient *music and background noise* are especially important atmospheric cues in retail stores given their ubiquity in retail settings (Biswas, Lund, and Szocs, 2018). In-store music is an environmental factor that has been shown to influence shopper's behaviour through the mediation of emotions (e.g. Petruzzellis et al., 2017; Morrison et al., 2011) and cognitions (e.g. Chebat et al., 2001). According to the servicescape theory (Bitner, 1992), the *spatial layout and functionality* are considered a key element in retail store environments in terms of positively influencing consumer experiences and behavioural intentions such as repeat purchases (Wakefield and Blodgett, 2016; Baron et al., 2009; Timothy, 2005; Arnold and Reynolds, 2003; McGoldrick, 2002; Bitner, 1992). For instance, recent research found that perceived crowding plays a significant role in mediating the relationship between the effects of store layout on shopping intentions (Alawadhi and Yoon, 2016). Similarly, effective design of the *signs, symbols, and artefacts* can influence cognitive and emotional responses and lead to positive behavioural intentions (e.g. intention and willingness to revisit and recommend to others) (Poldma, 2017; Wakefield and Blodgett, 2016; Baron et al., 2009).

Finally, *sociability* appears to be another important element in all shopping environments, and in the physical context it includes interaction among customers and employees, social mix and density, and displayed emotions of other consumers (Nilsson and Ballantyne, 2014; Baker and Wakefield, 2011; Rosenbaum and Massiah, 2011; Mari and Pogessi, 2011; Baron et al., 2009; Tombs and McColl-Kennedy, 2003). Those aspects combined with consumers' shopping motives, personal characteristics, socio-economic group, and situational factors can affect consumers' affective states and cognitive and behavioural responses (Nilsson and Ballantyne, 2014; Baker and Wakefield, 2011; Rosenbaum and Massiah, 2011; Mari and Pogessi, 2011; Baron et al., 2009; Tombs and McColl-Kennedy, 2003).

In the context of urban shopping destinations, *urban design* that has been found to positively influence shopper behaviour (e.g. increased time spent, increased number of retailers visited) and increase the attractiveness of a destination in terms of creating a

memorable, pleasure-inducing place (Lew, 2017; Sheppard, 2015; De Nisco and Warnaby, 2014; Carmona et al., 2010). Similar to retail store environment research, urban design also encompasses a *city's form and layout and spatial layout and functionality* in this regard refers to the ability of spaces and physical abilities to provide ease of entry and facilitate browsing, cross shopping between retailers, and accomplishment of goals (Lew, 2017; De Nisco and Warnaby, 2014; Gibbs, 2012). *Sound* is important in helping visitors to establish a sense of place and contributes to the perceived quality of the urban environment and identity of a city (Sun et al., 2019; Rehan, 2016). Finally, the *social environment* in an urban context is important for visitors in forming place identity and images formed and is therefore a determinant of visitors' relationship with the place (Hart et al., 2013; Ramkissoon et al., 2012; Tsai, 2012).

4.3.2 Retail Environment Research in Digital Retail Environments

Various environment cues have also been investigated in the online retail environment such as *layout and design* (Manganari et al., 2011; Vrechopoulos et al., 2009), web stores' quality and brand (Chang and Chen, 2008) and web graphics (Koo and Ju, 2010). In comparison to physical retail stores, the visual design of a website refers to the consistency, aesthetic and attractiveness of the website's appearance and includes images, colours, fonts, shapes, animations and layout (Li and Yeh, 2010; Cyr and Bonanni, 2005). *Aesthetics* has been the focus of many online (e.g. Liu et al., 2016; Chang et al., 2014; Rose et al., 2012; Wang et al., 2010) and mobile studies (e.g. Lee, 2018; Sahoo and Pillai, 2017; Huang, 2017) and this term has been used to describe the overall visual design factors (Liu et al., 2016). The relationship between aesthetic design and various cognitive (e.g. attitudes, Sahoo and Pillai, 2017; Wu et al., 2013) and affective (e.g. satisfaction and arousal, Wang et al., 2011, Wang et al., 2010) states has been studied in this area. Aesthetic design has been found to influence mobile technology acceptance (Cyr et al., 2006) and behavioural intentions (Sahoo and Pillai, 2017) while in e-commerce it has been found to influence beliefs and subsequent purchase behaviours, expectations and evaluation of service quality (Cheung, Chan, and Limayen, 2005; Karimov et al., 2011; Wells et al., 2011).

The *spatial layout and functionality* in physical retailing aligns with the navigation design in e-commerce, which encompasses the organisation and structural layout of the website's pages and content (Vance et al., 2008; Hasan, 2016). The ease of layout and functionality plays a significant role in shaping shoppers experience in terms of affective and cognitive states (Hasan, 2016), which indicated that this retail environment factor could also be important in VR retail environments. Additionally, prior research has demonstrated that visual design of e-commerce websites affects various enablers of online buying behaviour such as perceived ease of use, perceived usefulness, perceived enjoyment and ultimate acceptance of online shopping (Li and Yeh, 2010; Kim and Stoel, 2004). Consistent with TAM research (Davis, 1989), m-commerce studies found that *perceived ease of use and usefulness* influence attitude and determine user's technology adoption (Chhonker et al., 2018; Natarjan et al., 2018; Ko et al., 2009; Kulviwat et al., 2007; Bruner and Kumar, 2005; Nysveen et al., 2005). The same has been found for e-commerce where perceived ease of use has been found to shape emotions, attitudes and behaviour (Rose et al., 2012; Manganari et al., 2011). In the tourism context, Disztinger et al., (2017) confirmed the relationship between perceived usefulness and intention to use VR. Given the influence of perceived ease of use and usefulness on user adoption of various technologies, it seemed important to consider these elements when evaluating user acceptance and behaviour of VR retail environments.

In e-commerce, the atmospheric variable of *sound* can be embedded in the design features through video or music to provide an absorbing and escaping experience that influences presence (Ettis, 2017; Lombard and Snyder-Duch, 2001; Shih, 1998). Notably, the *social dimension* takes a new role in virtual environments and is closely linked to one aspect of interactivity, namely, the exchange of information among and between community members and between community members and the host community (Jang et al., 2008) (e.g. 24/7 support by customer representatives, Fiore et al., 2005). In this respect, the term social presence is used to describe the perception of personal, sociable, sensitive human elements of the virtual environment (e.g. website) (Gefen and Straub, 2004; Short et al., 1976). This could include socially rich text and descriptions (e.g. text or images) that evoke emotions and/or live interactive online chat boxes (Ogonowski et al., 2014; Qiu and Benbasat, 2005; Hassanein and Head, 2007). Social presence in online

shopping environments acts as a communication channel because it enables interactions between users and customer service representatives, which enhances the user's perception of usefulness (Qiu and Benbasat, 2005; Karahanna and Straub, 1999; Gefen and Straub, 1997).

4.3.3 Applying S-O-R Research to V-commerce

4.3.3.1 VR Retail Environment (Stimuli)

Similar to e-commerce research, VR studies indicated that *sound* is important in creating realistic virtual environments, and when combined with visuals it leads to absorption and escapism into the virtual world (Jung et al., 2017; Martins et al., 2017; Guttentag, 2010). In VR research, *visuals* followed by sound are the two most studied senses and are important for creating realistic virtual environments (Martins et al., 2017; Gutierrez et al., 2008). More specifically, visuals that present destinations in creative ways increase arousal and presence and realistic 3D images increase the destinations attractiveness and improve the overall VR experience (Marasco et al., 2018; Tussyadiah et al., 2016). Only few studies have focused on other atmospheric cues such as scent (e.g. Washburn et al., 2016; Chen, 2006; et al., 1999; Zybura and Eskeland, 1999). Hence, researchers (Dad et al., 2016; Hassouneh and Brengman, 2015; Krasonikolakis et al., 2011; Vrechopoulos et al., 2009) have pointed out that research in the context of VR retail atmospherics is still in the initial stages. Given the importance of sound in both offline and online retail settings and in prior VR studies, sound is considered an important atmospheric cue to consider in the evaluation of VR retail environments.

Previous studies indicated that *interactivity* positively influences consumers' attitudes towards online retailers and online purchasing (Vonkeman et al., 2017; Campanelli, 2004; Fiore and Jin, 2003; Gehrke and Turban, 1999; Hartnett, 2000; Li et al., 2001; Wu, 1999). This study adopted the definition by Steuer (1992) who referred to interactivity as the extent to which online users might participate in adjusting the website's content in real-time. Jang et al., (2008) also argued that interactivity includes the interaction in virtual communities among and between community members and between community members and the host community. Interactivity leads to increased enjoyment and positively influences individual's attitude toward the online retailer as well as their

behaviour (e.g. online purchasing and impulse buying) (Vonkeman et al., 2017; Campanelli, 2004; Fiore and Jin, 2003; Gehrke and Turban, 1999; Hartnett, 2000; Li et al., 2001; Wu, 1999). Interactivity has also been found to influence presence in both online (Vonkeman et al., 2017; Fiore et al., 2005; Sautter et al., 2004; Eroglu et al., 2001; Shih, 1998) and VR (Schnack et al., 2018) retail environments, which indicated that it could be an important factor to consider in this study.

Additionally, prior research has demonstrated the importance of *social presence* in both offline and online shopping environments and demonstrated its impact on approach/avoidance behaviour, which suggested that it could also be an important factor for VR retail environments. In support of this, Dad et al., (2018) argued that social cues are limited in online retailing environments, and this limitation could be overcome in VR retail environments where virtual shoppers can experience other shoppers' avatars shopping around them (e.g. Second Life). Moreover, as previously discussed, psychological *presence* (i.e. the feeling of being present in the virtual environment rather than where the users' physical body is) together with physical immersion (i.e. the extent to which the user is isolated from reality) are the two main factors that constitute a VR experience (Gutierrez et al., 2008; Disztinger et al., 2017). An increased sense of presence increases the effectiveness of the VR application (Martins et al., 2017) and can lead to attitude and behaviour change (Fox et al., 2014) and is therefore considered an important concept to consider in the evaluation of VR retail applications.

Although VR shopping applications are still at the developmental stage, there is potential for realistic simulated retail environments to be developed similar to bricks and mortar stores (Lau et al., 2013). Only few studies (e.g. Dad et al., 2018; Dad et al., 2016; Hassouneh and Brengman, 2015; Krasonikolakis et al., 2011; Vrechopoulos et al., 2009) have investigated store atmospherics and their effect on shoppers' behaviour in virtual worlds, and even fewer (Dad et al., 2018; Vrechopoulos et al., 2009) have focused on a specific environment cue (music and layout design, respectively) and its effect on shoppers' behaviour. The remaining examples (Dad et al., 2016; Hassouneh and Brengman, 2015; Krasonikolakis et al., 2011) aimed to define and explain the VR retail environment. For example, as previously mentioned, in an attempt to define the entire 3D

VR retail environment (e.g. Second Life) Dad et al., (2016) recently developed the 3D servicescape model consisting of 21 environmental cues from virtual air to compatibility. However, the researchers pointed out that it is possible that there is no effect on some environment cues on shoppers' emotions and behaviour because the environment was defined using eight in-depth interviews only (Dad et al., 2016). Therefore, further empirical research is required to investigate the effects of atmospheric cues of 3D servicescape on virtual shoppers' behaviour (Dad et al., 2016).

4.3.3.2 Emotions (Organism)

To better understand the way that atmospherics influence shopper behaviour, it is important to consider the mood and emotions that shoppers experience while shopping within a specific store (Morrison et al., 2011). As previously discussed, Mehrabian and Russell (1974) focused only on emotional responses (i.e. PAD), however, Bitner (1992) later incorporated cognition and physiology within the S-O-R theory while expanding its application to servicescapes. From then, studies employing S-O-R theory have investigated affective and cognitive responses (organism) (e.g. Kim et al., 2018; Wang et al., 2011; Wu et al., 2013). Emotions have also been studied in retail (Kim et al., 2018; Wu et al., 2013) and tourism research (Liu, 2016; Lee, 2014; Hosany and Gilbert, 2010) and further studies considering both positive and negative emotions has been called for (Liu, 2016).

Prior studies have indicated that VR could potentially generate an emotional connection between visitors and tourism destinations and have a positive influence on affective elements of destination image (Griffin et al., 2017; Huang et al., 2013). Presence influences the intensity of emotions felt in and induced by the virtual environment (Riva et al., 2007). More specifically, emotional states play a key role in the definition of *virtual experience*, which entails consumers' psychological and emotional states felt during interaction with products in a virtual environment (Li et al., 2001). Although many emotional scales have been developed, and the PAD scale remains dominant in tourism, marketing, and consumer behaviour research (Correia et al., 2017; Li et al., 2015). However, the PAD scale employs only positive emotions and this study aims to evaluate

both positive and negative emotions as suggested by prior research (Liu, 2016) for several reasons.

Firstly, emotional states are considered the outcome of consumers' reactions to store stimuli and often serve as the organism or intervening variable in many consumer behaviour studies adopting S-O-R theory (Cheng et al., 2009; Wu et al., 2013), which indicates its applicability in this specific context. The retailing literature indicates several factors that a shopper's perception of store atmosphere and layout design could potentially elicit positive or negative emotions (Wu et al., 2013; Richard, 2005; Hong et al., 2004), which then influences approach/avoidance behaviour (Ettis, 2017; Wu et al., 2013; Kumar et al., 2010; Karimov et al., 2011; Koo and Ju, 2010; Yen and Lu, 2008; Liu et al., 2008; Eroglu et al., 2001). However, it is unknown whether the same would apply in VR retail environments; hence, further research is required. Also, negative emotions are also unavoidable when travelling to new destinations (Liu, 2016) and emotions in general are a major motivation for purchase and consumption of products including travel (Goossens, 2000). VR technology offers an increased sense of presence compared with previous technologies and therefore could potentially trigger a deeper emotional connection with consumers.

Finally, VR studies have indicated that individuals could have a negative response to VR given its immersive nature, although many studies continue to focus only on the positive response to this technology, which indicates the need for further studies evaluating both positive and negative emotional responses. Therefore, this study draws on the Differential Emotions Scale (Izard, 1977), which requires respondents to consider the experience and rate how each fundamental positive and negative emotion was experienced during the experience. This particular emotional scale has been utilised in prior tourism studies (e.g. Correia et al., 2017; Li et al., 2015; Jang and Namkung, 2009), which confirms its validity in the context of tourist/visitor experience when visiting destinations. More specifically, this study employs the scale in the context of urban shopping destinations, which potentially extends prior research.

4.3.3.3 Behavioural Intentions (Response)

Behavioural intentions are the outcome of individuals' response to specific environment cues and are important to consider in order to ensure the favourable outcomes (i.e. approach behaviour). More specifically, behavioural intentions mediate the relationship between attitude and actual behaviour (Marangunic and Granic, 2014; Ajzen, 1991; Beck and Ajzen, 1991; Fishbein and Ajzen, 1975) and can be defined as subjective judgements by people about how they will behave in the future (Blackwell et al., 2006, p.375). As pointed out throughout this chapter, and in line with intentions outlined by Blackwell et al., (2006), several key behavioural intentions considered in the retailing literature include intent to purchase, increased time spent, increased money spent, repurchase intentions, consumption intentions, search intentions, shopping intentions, willingness to re-visit, and willingness to recommend to others. In the VR-tourism context, studies tend to focus on the influence of VR in encouraging positive behavioural intentions in the form of real visitation (Jung et al., 2017; Tussyadiah et al., 2016), although few studies have been conducted focusing on marketing urban places.

4.3.3.4 Technology Adoption (Stimuli) and Attitude (Organism)

Moreover, throughout this chapter it is evident that all studies employing S-O-R theory measure individuals' internal response to specific environment cues through affective and/or cognitive states. Drawing on these examples, this study aims to explore affective and cognitive response to VR retail environments including emotions and attitude, respectively. In particular, attitudes have been evaluated in retail (Kim et al., 2018; Wu et al., 2013), tourism (Lee, 2014; Hosany and Gilbert, 2010; Thomas and Carey, 2005; Tooke and Baker, 1996; Sussman and Vanhagen, 2000), and VR studies (Tussyadiah et al., 2016; Fox et al., 2014) and is an important aspect of technology adoption theories (e.g. TRA, Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980 and TPB, Ajzen, 1985, 1991) including the original TAM (Davis, 1989). More specifically, studies have explored the relationship between presence in computer-mediated environments and attitude to the ad/advertised product (Keng and Lin, 2006; Sundar and Kim, 2005; Klein, 2003) and also the effects of images of tourism destinations in these environments and attitude toward the destination (Thomas and Carey, 2005; Sussman and Vanhagen, 2000; Tooke and Baker, 1996).

Although the original TAM (Davis, 1989) was later developed into the TAM 2 (Venkatesh and Davis, 2000) and TAM 3 (Venkatesh and Bala, 2008), the original model remains popular in the field of technology adoption (Marangunic and Granic, 2014; Miltgen et al., 2013). Emergent technology studies (e.g. Disztinger et al., 2017; Rese et al., 2016; Huang et al., 2013) continue to employ this particular theory and provide evidence of its theoretical validity, thus, it seems logical to evaluate the linkage between the two main variables of the TAM (perceived ease of use and usefulness) and its influence on attitudes and behavioural intentions in the context of VR retail research in order to potentially extend TAM research into this new context.

Furthermore, given that several retail environment cues (design, sound, layout and functionality, interactivity and sociability) and usability (perceived ease of use and usefulness) variables are not exclusive to VR retail environments but have been widely documented in a number of shopping environments both offline and online, this study expects that VR retail environments should induce similar effects. In other words, the features leading to individuals' behavioural intentions might be different in two environments, but there is no priori reason why VR should have lesser influence on behavioural intentions than other offline and/or online retail store environments, at least in realistic VR retail environments that provide feelings of immersion and presence. Therefore, it is expected that those retail environment cues that are relevant to VR retail environments could influence individuals' behavioural intentions.

4.4 Summary

Overall, the literature synthesis links the literature on both physical (in-store, shopping malls and town centres) and virtual (web, mobile) retail environments that were critically discussed in the literature chapter. The reviewed literature suggested that traditional retailing theories could potentially apply to VR retail environments in the urban shopping destination context (Research Question 1). Additionally, the effect of specific VR retail environment cues could influence visitors' internal states (affective and cognitive) and behavioural intentions (approach/avoidance) in this same context (Research Question 2). Accordingly, several key research areas became evident in the majority of contexts and assisted in forming the topics explored in the primary data collection phase including the

influence of VR retail environment cues on visitors' behaviour. Importantly, it became evident that extensive retail store environment research has employed S-O-R theory and explored the influence of various environment cues on shopper's behaviour mediated by internal response. However, research focusing on the wider urban centre/shopping destination have been limited in comparison. The majority of web and mobile studies adapt Eroglu et al's. (2001) S-O-R model by employing affect and cognition, or specific elements of affect (e.g. emotional arousal) and cognition (e.g. attitude), as the mediating variables between environment cues and consumer behaviour, which indicated their relevance to the omnichannel retail context. The physical environment cues often take on new roles in the virtual context and although online and mobile shopping have been widely researched (albeit the latter by comparison), as new technologies emerge it is important to understand the influence of the retail environment cues in new virtual retail environments on individual's behaviour, specifically when using new technologies to attract visitors to urban shopping destinations.

The S-O-R theory may be a useful framework to explore the factors associated with VR (Kim et al., 2018) although studies applying the theory to the VR retail context remain limited to date. Given that extant literature has already pointed to several of these relationships in physical store environments, these relationships might not appear novel when referred to physical environments, particularly at the wider urban scale. However, this study is one of the first to investigate the relationships of specific environment cues (i.e. design, sound, layout and functionality, interactivity and sociability) in a VR retailing and urban place context and relate S-O-R theory aimed at understanding visitor's behavioural response to VR environment cues in the context of urban shopping destinations. Specifically, this study focused on the wider urban scale given its prominent role in attracting a wide variety of domestic and international visitors to a specific place for retail purposes. Additionally, it is the role of urban place marketers to integrate novel marketing methods to achieve this aim of urban places. Therefore, it is important to investigate how new digital marketing and retail platforms could be integrated into their strategic marketing plan in order for them to achieve this aim. Not only will such research be useful for industry, it will contribute theoretically to a number of research streams.

Chapter 5 - Methodology

5.1 Introduction

The aim of this chapter is to detail the employed methods for the primary data collected in this research project. This chapter begins by outlining the philosophical positioning of this research followed by an overview of the research methods employed in this study. This chapter also provides an in-depth discussion and justification of the approaches taken in each research phase. Overall, the primary data collection was conducted in two research phases. Firstly, interviews with urban place marketers in the UK were conducted and this was followed by interviews with visitors to an urban shopping destination in the UK (Research Phase 1). Then, quantitative survey data were collected with potential visitors to urban shopping destinations (Research Phase 2). The data collection process for each research phase is outlined including the instrument design, population, sampling method and analysis technique. The final sections discuss the reliability and validity, limitations and ethical issues associated with aspects of the employed research design.

5.2 Research Philosophy

A philosophical paradigm is a whole system of thinking (Neuman, 2006). Regarding research, the philosophical paradigm is the researcher's system of beliefs and assumptions about the development of knowledge (Saunders, Lewis, and Thornhill, 2016). This is important as the researcher's philosophical position shapes the research questions, and underpins the methodological choice, research strategy, data collection techniques and analysis of findings (Saunders et al., 2016). In the social sciences, the main research philosophies are positivism, interpretivism, realism (or critical realism) and pragmatism. The research philosophy employed contains important ontological and epistemological assumptions that underpin the research strategy and the research methods and methodology (Saunders et al., 2016). Therefore, the ontology, epistemology, and methodology of this research are explored prior to discussing pragmatism as the philosophical positioning.

5.2.1 Ontology, Epistemology, and Methodology

Competing approaches in the social sciences are contrasted based on their ontological, epistemological and methodological base (Corbetta, 2003; Della Porta and Keating, 2008). Ontology refers to the researchers' system of beliefs that reflect the interpretation about what constitutes fact, influences the researcher's choice of what to research, and shapes the way the chosen research objects are perceived and studied (Saunders et al., 2016). The two alternative perspectives of ontology are objectivism and subjectivism. Objectivism represents the position that things (e.g. social entities) exist as meaningful reality external to those social actors concerned with their existence (Crotty, 1998; Saunders et al., 2016). Subjectivism assumes that social phenomena are created from the perceptions and consequent actions that are in a constant state of revision, of those social actors concerned with their existence (Saunders et al., 2016).

Epistemology refers to the theory of knowledge and is therefore related to the possibility of knowing the world and the forms that knowledge would take (Corbetta, 2003). It refers to how human beings have come to have knowledge of the world around them and is concerned with the possibilities, nature, sources and limitations of knowledge in the field of study (Dudovskiy, 2016; Blaikie, 2004). It provides a philosophical grounding for establishing what kinds of knowledge are possible and for deciding how knowledge can be judged as being both adequate and legitimate (Blaikie, 2004). The understanding of what knowledge is and how we acquire it defines the nature of the questions the researcher might ask when carrying out research, as well as the methodology and methods the researcher considers appropriate to address the research questions (Hammond and Wellington, 2013). Therefore, Hammond and Wellington (2013) argued that ontology and epistemology should be at the top of the hierarchy of issues for consideration when it comes to shaping the research project.

The methodological base refers to the technical instruments that are used to acquire that knowledge (Corbetta, 2003). According to Della Porta and Keating (2008), the methodological question refers to the instruments and techniques we use to acquire knowledge. Given that there are multiple ways of acquiring each type of knowledge, the methodological question is independent of the ontological and epistemological questions

(Della Porta and Keating, 2008). Questions about methods come together with epistemology and theory in discussions about methodology, which refers to the way in which methods are used (Della Porta and Keating, 2008).

5.2.2 Philosophical Debate

The debate on ontology and epistemology is often framed in terms of either positivist or interpretivist research philosophy (Saunders et al., 2016). Positivism implies that the research findings are objective facts and therefore established truths (Gray, 2014; Altinay and Paraskevas, 2009). Consequently, positivists tend to use quantitative methods concerned with statistical analysis (e.g. survey research or field experiments) and aim to generate knowledge based on sensory experiences obtained from experimentation, as well as interviews, surveys and observations (Altinay and Paraskevas, 2009; Neuman, 2006). The ontological position of the quantitative paradigm is that there is only one truth: an objective reality that exists independent of human perception (Sale et al., 2002). Epistemologically, from the positivist perspective the investigator and the investigated are independent entities; therefore, the researcher can study a phenomenon without influencing it or being influenced by it (Sale et al., 2002).

In comparison, from a constructivist or interpretivist perspective, concepts are nominal and emerge from social interaction to reflect human needs and interests (Hammond and Wellington, 2013). That is, humans create meanings, which makes them different from physical phenomena, therefore, each must be studied differently (Saunders et al., 2016). Specifically, interpretivists assert that as people of different cultural backgrounds, under different circumstances and at different times, make different meanings, they create and experience different social realities, leading interpretivists to be critical of the positivist attempt to discover definite, universal laws that apply to everybody (Saunders et al., 2016). Overall, the purpose of interpretivist research is to create new, richer understanding and interpretations of social worlds and contexts (Saunders et al., 2016).

In comparison, positivists find issues such as reliability, validity, and bias relevant, whereas interpretivists are more likely to be as interested in the consequences of the phenomena as they are in accounting for the phenomenon in the first place (Hammond and Wellington, 2013). However, some would argue that choosing either a positivist or

interpretivist position is somewhat unrealistic, and therefore, adopt a pragmatist position (Saunders et al., 2016). It is assumed that predetermining the methodology restricts the choice of methods and techniques and their appropriateness for problem solving (Guthrie, 2010). Therefore, pragmatists employ the method most suitable for answering the particular research question, problem or aim and objectives (Saunders et al., 2016; Guthrie, 2010). As such, they may use a range of methods including mixed, qualitative, quantitative or action research and regardless of the method used, the emphasis is on practical solutions and outcomes (Saunders et al., 2016). A pragmatist philosophy underpins this research and consistent with prior research (Saunders et al., 2009; Guthrie, 2010), it is argued that the most important determinant of ontology and epistemology is the research question, problem or aim and objectives. Accordingly, the following sections focus on detailing specifically how the pragmatist philosophical positioning underpins each aspect of this research project.

5.2.3 Applying Pragmatist Philosophy to this Research Project

The research approach is based on the research philosophy and determines the research design. Specifically, induction, deduction and abduction are research approaches and forms of logical reasoning that are used in every type of research (Reichertz, 2014). Inductive approach argues that empirical generalisations and theoretical statements should be derived from the data, therefore, hypotheses are derived from theory and then tested against data (Miller and Brewer, 2003). In comparison, deduction begins with a specific theory or rule and examines how the raw data support the rule (Reichertz, 2007). Kennedy (2018), argued that the risk with deduction is that researchers become less sensitive to participants, the field under study, and the data collected, since the main concern simply is to prove or demonstrate the theory and assert a priori arguments. On the other hand, induction remains close to the data and can reveal new understandings of existing knowledge and conclusion (Reichertz, 2007). In qualitative research, induction means that patterns, concepts and theories emerge from data through the researcher's interactions with the data without pre-supposing such outcomes *a priori* (Kennedy, 2018). However, it is argued that inductive conclusions are often hypothetical and fallible, as observations could be in existence in a given situation; they just have not yet been observed (Kennedy, 2018).

Taking an alternating focus between induction and deduction is known as abductive reasoning, which aims to overcome these proposed limitations of the two approaches by employing a pragmatist perspective (Hammond and Wellington, 2013). Abduction is concerned with discovering new concepts, ideas and explanations by finding surprising phenomena, data or events that cannot be explained by pre-existing knowledge (Kennedy, 2018). Specifically, abduction requires interplay between data collection and analysis and also data and theory (Kelle, 2014). In this case, the ongoing analysis suggests plausible hypotheses to investigate further and the researcher must draw implicitly or explicitly on previous theoretical knowledge (Kelle, 2014). Additionally, the researcher must re-think, revise or challenge established assumptions to resolve surprising or puzzling data (Alvesson and Kärreman, 2011).

Mixed methods may use both deductive and inductive approaches by, for example, employing qualitative methods as the preliminary stage to test a theoretical proposition, followed by further quantitative research to develop a richer theoretical understanding (Saunders et al., 2016). For this study, an abductive approach was implemented. Accordingly, given the limited research investigating the phenomenon under study, exploratory data were collected to test the employed theories in the context of this study, to identify themes and patterns from the data analysis, and then locate these in a conceptual framework to test through subsequent quantitative data collection (Saunders et al., 2016). The findings were incorporated with existing theory where appropriate to modify existing theory to the study context (Saunders et al., 2016).

5.2.4 Research Purpose: Exploratory and Explanatory

According to Saunders et al., (2016), the research purpose can be categorised as exploratory, descriptive, explanatory or evaluative. Exploratory research seeks to discover, describe or map patterns of behaviour in areas or activities which have not been previously studied and therefore aims to gain insights into a topic of interest by asking questions associated with the *what* and *how* (Saunders et al., 2016; Veal, 2006). This type of research is common in the tourism domain because of the changing nature of the phenomena being studied (e.g. the relative popularity of different tourism destinations changes) and the frequent separation between research and action (Veal, 2006).

Exploratory studies tend to use a qualitative approach such as interviews given their exploratory nature, and the qualitative findings are often useful in guiding the subsequent stage of the research (Saunders et al., 2016). Exploratory research requires flexibility and adaptability to change and in comparison, explanatory research requires a clear picture of the phenomenon under investigation and therefore could be an extension of a piece of exploratory research (Saunders et al., 2016). Research projects could concentrate on only one of the research types, however, often two or more of the approaches are included in the same research project (Veal, 2006; Saunders et al., 2016). Therefore, in order to reach the overall aim, this study combined exploratory (Research Phase 1) and explanatory (Research Phase 2) research, which was achieved by the use of mixed methods research design outlined above and discussed in more detail in the following subsections.

5.3 Research Methodologies and Data Collection Methods

The following section discusses the research methodologies and data collection methods employed for this study. Prior to conducting the research, ethical approval was granted by Manchester Metropolitan University through EThoS (see 12.5.1 for ethical approval letter).

5.3.1 Overview of Mixed Methods Employed for this Study

Mixed methods can be defined as a *"class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study"* (Johnson and Onwuegbuzie, 2004, p.17). Indeed, prior researchers indicated that qualitative and quantitative approaches can be combined because they share the goal of understanding the world in which we live (Haase and Myers, 1988), they both share a unified logic, and the same rules of inference apply to both (King, Keohane and Verba, 1994). Adopting a mixed method approach is becoming increasingly and independently articulated as the third methodological movement alongside each of its component methods (qualitative and quantitative) (Tashakkori and Teddlie, 2003). Indeed, pragmatists value both research methods and view the exclusive adoption of one philosophical position as unhelpful (Saunders et al., 2016; Tashakkori and Teddlie, 2010).

In this study, a mixed method approach was employed. First, qualitative data were collected followed by quantitative data, therefore, basing quantitative research on initial qualitative results (Hesse-Biber, 2010; Veal, 2006; Morgan, 1998). Mixed methods have also been widely used in tourism research (e.g. French et al., 2017; Rittichainuwat and Rattanaphinanchai, 2015; McGehee et al., 2013; Tutenges, 2012) and these studies provide evidence that mixed methods approach is useful for tourism studies specifically investigating motivations and behaviour. Additionally, studies on consumer behaviour in in retailing research have employed this approach (e.g. Krasonikolakis et al., 2018; Lee and Han, 2017). Further mixed methods studies have been called for in earlier research (see for example, Creswell, 2009; Eriksson and Kovalainen, 2008; Creswell and Clark, 2006; Ryan et al., 2002; Yin, 1994) for several reasons such as to improve the validity of theoretical propositions and to obtain a more complete (less biased) picture of the phenomenon under study than it is possible with a narrower methodological approach. Therefore, a mixed method approach is considered appropriate in this disciplinary context and for this study, which investigates the influence of VR retail environment cues on visitors' behavioural response in the context of urban shopping destinations.

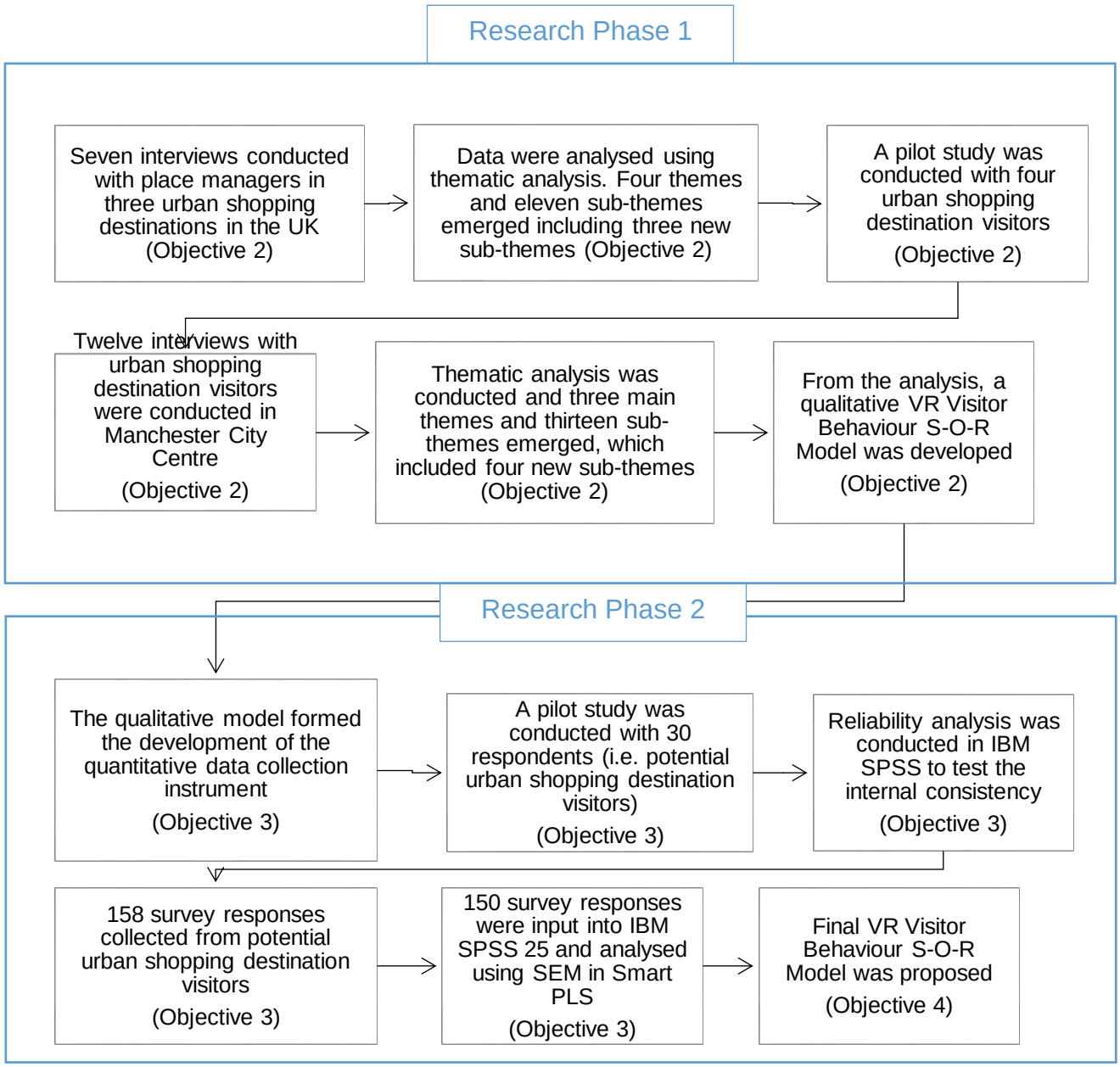
In this study, the thorough review of relevant literature assisted in achieving objective one, which was to critically review four key areas of research including: 1) urban place marketing, 2) retail store environment, 3) immersive technology and 4) technology adoption. Because there was limited research investigating the influence of VR retail environment cues on visitors' behavioural response in a specific urban shopping destination context, literature on retail store environment, e-commerce and m-commerce were initially reviewed. The review of e-commerce and m-commerce literature provided insights into how traditional retail store environment research and theories are applicable to digital retail and marketing methods in order to determine how it could potentially be applied to v-commerce. Additionally, a review of literature extending these research streams to the urban place context was examined. Then, immersive technology research, specifically associated with VR and retail/tourism marketing was reviewed, following by a discussion on technology adoption theories. Overall, the review of literature helped to identify several key research areas that were consistent throughout the majority of

contexts and assisted in forming the topics explored in the primary data collection phase including the influence of VR retail environment cues on visitors' behaviour.

More specifically, an exploratory qualitative approach was required to identify context-specific variables and determine the relevance of existing theory to the VR retailing context. Therefore, two sets of interview data were gathered including: 1) interviews with urban place marketers and 2) interviews with potential visitors to urban shopping destinations (Research Phase 1). Both interviews assisted with achieving objective two, which was to investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations.

The qualitative findings were incorporated into a theoretical model, which was validated by collecting 150 survey responses from potential visitors to urban shopping destinations (Research Phase 2). This assisted in achieving objective three, which was to validate a proposed model portraying the influence of the VR retail environment cues on visitors' behaviour in the context of urban shopping destinations. Through validation of the survey, objective four was achieved, which was to propose a new theoretical model portraying the influence of the VR retail environment cues on visitors' behaviour and provide guidance to urban place/destination marketers and VR developers and designers. Figure ***5.1*** provides an overview of the entire data collection process.

Figure 5.1 Overview of data collection process



(Source: Authors own)

5.4 Research Phase 1: Exploratory Semi-Structured Interviews with Urban Place Marketers and Urban Destination Visitors

Research phase one contributed to achieving objective two, which was to investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations. During this research phase, three cases (Manchester, Liverpool, and Chester) were used to gain an initial understanding of urban place marketers' views on the opportunities and barriers of using immersive technologies to market urban places. A contrasting case approach was employed in order to discover any contrasts, similarities or patterns across the three cases that were used to enrich the development of the qualitative theoretical framework (Mills et al., 2010). The findings from the pilot study were useful because they provided initial insights into urban place marketers' views on the perceived barriers, benefits, internal organisational capability and external pressures associated with immersive technology (AR and VR) implementation, as well as their future intention to adopt such technologies for marketing purposes.

During research phase two, additional qualitative data were collected including semi-structured interviews with twelve visitors to Manchester City Centre in August 2018. Prior to participating in the interview, each participant tested two VR retail applications based on the same urban shopping destination (Dubai). The following section provides more in-depth information on the step-by-step interview process, instrument design, population, sample size and data collection process of each set of interviews. Then, an explanation of the conducted thematic analysis is presented.

5.4.1 Urban Place Marketers

5.4.1.1 Interview Process

The qualitative research design adopted for this part of the study used in-depth, semi-structured interviews conducted with urban place marketers experienced in marketing urban shopping destinations. Interviews are useful in yielding descriptive, explanatory, and/or exploratory data (Dwyer, Gill and Seetaram, 2012), and allow the participant to express their view, attitude and opinion, resulting in a first-person account of the phenomenon (Wilson, 2013; Packer, 2011). Qualitative interview technique has been employed in retail (e.g. Ballantine et al., 2010) and VR and tourism research, including

studies to investigate VR for destination marketing (e.g. Jung et al., 2017; Tussyadiah et al., 2016), VR for travel planning (e.g. Bordelon, Jafarnejad, and Williams, 2018), and perceptions of VR (e.g. Mura, Tavakoli, and Sharif, 2016). Specifically, tourism studies have provided evidence on the usefulness of the qualitative interview technique when investigating managerial perspectives (e.g. Oggionni and Kwok, 2018; Pouder et al., 2018; Zavattaro et al., 2015; Bornhorst et al., 2010).

The literature reviewed in chapter two revealed there is no prior research that is closely related to this topic from the view of urban place marketers. Therefore, given that qualitative research is especially appropriate for studying topics or issues for which there is little knowledge known but further details needed (Creswell, 2013; Wilson, 2013), as is the case in this research, an exploratory research approach that uses qualitative research design seemed most suitable (Pouder et al., 2018). This approach allowed the researcher to probe the topic of interest on an in-depth basis (Bornhorst et al., 2010). For this study, the interview process was conducted in two steps (see 12.6.2 for data collection instrument):

(1) To begin the interviews, participants were asked to provide an overview of their role and main duties within the organisation
(2) The main interview questions explored:
    a. Perceived barriers and benefits of immersive technology implementation for 1) visitors to urban shopping destinations and 2) urban place managers;
    b. Perceived internal organisational capability and perceived external pressures associated with immersive technology implementation for urban place managers.

5.4.1.2 Population, Sample Size and Data Collection

Shopping in the North West of England if often part of the trip for a majority of visitors with 71% of visitors going shopping during their trip (Visit Britain, 2013). Of this total figure, 60% shop for clothes or accessories and 43% shop for souvenirs (Visit Britain, 2013). Statistics from 2013 demonstrated that over 6,000 overseas visitors who stayed only in the North West reported visiting primarily for personal shopping as opposed to visiting this area to take a holiday (Visit Britain, 2013). These findings indicated the popularity of

cities in the North West of England in attracting international visitors for shopping. Therefore, three contrasting cases in the North West of England including Manchester, Liverpool and Chester were selected using judgemental sampling based on two criteria (see 12.5.2.1 for participant recruitment process). Using judgemental sampling method (also referred to as purposive sampling), the researcher used her judgement to select cases that will best assist with achieving the research objectives (Saunders et al., 2016). Additionally, prior marketing research on the urban places helped to inform this decision as outlined below. Judgemental sampling method is often used for very small samples such as in case study research and selecting a sample that is particularly informative (Neuman, 2005). However, the drawback of employing this method is that the sample cannot be statistically representative of the target population (Saunders et al., 2016) and research bias can occur given that the sample is based on the researcher's judgement. A justification for the choice of urban shopping destinations is presented below.

Manchester is the second most visited UK city destination for domestic visitors and the third most visited for international visitors (Visit Britain, 2017). Liverpool's city centre is central to the city's success as a retail destination and local authorities and major retailers are working together to organise campaigns to entice more people to visit (Invest in Liverpool, 2014). In comparison, Chester attracts more domestic visitors than international visitors (Marketing Cheshire, 2015), although, international tourism is expected to grow due to the Northern Tourism Growth Fund that is establishing consumer awareness in core markets including China, USA, Germany and Australia (CH1 Chester BID, 2017). Specifically, Greater Manchester attracts the most overseas visitors in the North West of England, followed by Merseyside then Cheshire (Visit Britain, 2013). Manchester city centre (200,000 per annum 2010-2012) and Liverpool city centre (around 170,000) attract most overseas holiday visits and were respectively the fourth and sixth most popular UK cities for overseas holiday visitors in 2012, while Chester attracts around 50,000 holiday visits per year (Visit Britain, 2013).

Moreover, a report by Statista (2016) based on 2014 statistics indicated that Manchester (annual revenue £910 billion) is the second leading retail centre in the UK by annual revenue, while Liverpool ranked sixth (annual revenue of £705 billion). Chester is not on

this list indicating that it is much smaller in scale in terms of the number of visitors it attracts for retail purposes and overall retail spend. Overall, the three cases are similar in that they are all UK city break destinations; however, Manchester and Liverpool are established within the international market and have a much higher retail spend potential. By comparison, Chester appeals more to the domestic market and has a much lower retail spend potential, however, it is clear that the city's marketers are aiming to increase the city's attractiveness to the international market.

In this part of the study, the population in which the sample has been selected is urban place marketers in urban shopping destinations in the UK. Urban place marketers are concerned with both new and existing shopping visitors' image perceptions, enhancing the attractiveness of a specific place, and differentiating the city to protect its long-term economic validity (Teller and Elms, 2012; Hart et al., 2007; Runyan and Huddleston, 2006). As outlined in a previous chapter (see 2.2.6), place marketers can include tourism departments or organisations (e.g. DMOs), city councils and BIDs. DMOs are the organisation responsible for the coordination of the complex tourism industry, and they are capable of developing and implementing innovative strategies in response to rapidly evolving marketing and environmental conditions (Ritchie and Crouch, 2003). Given that both DMOs and BIDs are responsible for marketing cities, recruiting a sample of urban place marketers from these organisations seems appropriate for this study.

A convenience sampling technique was employed to identify seven participants, at managerial level or in digital marketing, from this population that could provide useful insights into the topic of research. More specifically, those within managerial roles are responsible for overseeing the marketing activities within the organisation and were perceived to have knowledge and expertise in urban place marketing including the use of digital marketing channels. Additionally, participants in digital marketing roles within the marketing organisations are responsible for developing social media campaigns, web-based campaigns, and potentially developing marketing campaigns using new technologies (e.g. VR) and integrating technologies that enhance the destination experience (e.g. AR).

Overall, seven interviews were conducted throughout July – August 2017. The interviews were conducted at the urban place marketer's offices or over the telephone and lasted between 30-40 minutes. All interviews were audio recorded and transcribed into a word document within a maximum of three days after the interview was conducted (see 12.7 for interview transcripts).

Table ***5.1*** portrays the participant profile including participant's role and main duties according to the interview data, and also the participant number allocated for the analysis. Participants were provided a code from P1-P7. The coding was allocated in no particular order.

Table 5.1 Participant demographic profile

Participant No.	Role within the Organisation	Type of Organisation	Main Duties of the Role
P1	Commercial Director	DMO	To grow the visitor economy, increase brand awareness, entice visitors, increase expenditure and visitor satisfaction.
P2	Marketing Manager	DMO	To increase visitor number, develop the tourism offer in collaboration with tourism organisations, liaise with domestic/international audiences and target the consumer market.
P3	Digital Executive	DMO	To produce digital marketing content and manage the organisations online presence across several websites, social media and creating entertaining video content, digital content and writing blog posts.
P4	Marketing Manager	DMO	Focus on international campaigns in liaison with the local airport and leading airlines. Manage the Business Tourism market with focus on marketing and promoting the services the organisation offers and try to get business conferences to be held in the city.
P5	Head of Visitor Economy	DMO	To provide strategic guidance and support for tourism organisations across the local area.
P6	Marketing Manager	DMO	To manage visitor campaigns and activities across all digital marketing channels.
P7	Marketing Manager	BID	To ensure the city has visual appeal by collaborating with over 500 tourism businesses on projects aiming to improve the city centre and develop campaigns for those businesses.

(Source: Authors own)

5.4.2 Visitors Interviews

5.4.2.1 Interview Process

The aim of the semi-structured interviews with visitors was to identify emergent themes specific to visitors' response to the VR retail environment cues in the context of urban shopping destinations. In tourism research, interviews are useful in capturing participants' ideas, thoughts, and experiences in their own words, and give voice to the experiences of people that are often marginalised in traditional, survey-based quantitative studies (Dwyer et al., 2012). Interview technique allows tourism researchers to better understand visitor behaviour, experiences, and perceptions, and to approach issues in the field in a deep and rich way that is not possible within many quantitative methods (Dwyer et al., 2012). This method is considered most useful for gaining an in-depth understanding of tourism-related topics where differences in perceptions, attitude, impacts, behaviours and practices are anticipated, possible or important (Picken, 2017). Hence, there is abundant interview-focused research located within the visitor behaviour/consumer psychology and heritage/culture areas of study (Dwyer et al., 2012). Following guidance on conducting semi-structured interviews (Wilson, 2013), the interview process was completed in the four steps.

First, participants were briefed on the aim of the study and prior to completing the relevant ethics forms, each participant was informed about recording of the interviews and confidentiality and anonymity (Step 1). Then, each participant was asked three warm-up questions (Wilson, 2013) (Step 2) prior to experiencing two VR retail applications (Step 3). The main interview followed and during this, the most important questions were asked first, followed by a final open-ended question offering the participant to add any further comments or ask any questions (Step 4). A more in-depth explanation of the four steps can be found in the appendices (see 12.6.1).

5.4.2.2 Population, Sample Size and Data Collection

The population for the second set of interviews in Research Phase 1 was visitors to urban shopping destinations. Convenience sampling was employed for this study to identify twelve participants from the population. This method involves the recruitment of members of the target population that meet certain criteria (in this case, those who were accessible,

available and willingness to participate in the study) (Dörnyei, 2007) and has been used in prior studies on the use of emerging technologies by visitors and tourists (e.g. Barátová, Hager, Mayrhofer, and McFee, 2018; Jung, tom Dieck, Rauschnabel, Ascenção, Tuominen, and Moilanen, 2017) and in the context of virtual retail stores (e.g. Siegrist et al., 2019; Schnack et al., 2018; Huang et al., 2016; Kourouthanassis, Boletsis, Bardaki, and Chasanidou, 2014). Three categories of visitors were identified in accordance to prior definitions (e.g. Tourism Society, 2018; UNWTO Statistics Guidelines, 2010) as outlined in the previous chapter (see 2.1.2). The three visitor categories have provided a useful criterion for research conducted by DMOs (e.g. Marketing Manchester and Marketing Chester). Using a visitor sample in accordance to the below criteria was considered most appropriate to provide useful and quality data to achieve the research aim and objectives. One question was included in the participant consent form that required participants to identify with one of the three categories.

Regarding sample size, several researchers have suggested appropriate sample sizes for qualitative studies such as 5-25 (Creswell, 1998), 10-15 in-depth (Guest et al., 2006; Baker and Edwards, 2012), 25 for smaller projects (Charmaz, 2006), minimum of six (Guest et al., 2006) and minimum 15 (Bertaux, 1981). Guest et al., (2006) suggested that 12 in-depth interviews should suffice, however, Creswell (2013) and Saunders et al., (2016) agreed that between five and 30 interviews should be sufficient. Data saturation indicates that on the basis of the data that has been collected and analysed, further data collection and/or analysis is unnecessary and should be discontinued because no additional data is being found (Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs, and Jinks, 2018; Glaser and Strauss, 1967). According to Glaser and Strauss (1967), the researcher becomes empirically confident that a sample is saturated. Technology-related tourism studies using mixed methods have used a qualitative sample of 11 (e.g. French, 2017). Taking the recommendations into consideration and drawing on the effectiveness of prior study samples in the reviewed literature, the interviews continued to be conducted until data saturation was achieved, which was evident when the participants were providing the same responses for the main interview questions. Overall, data saturation was achieved after twelve interviews.

The anticipated length of the interview process was approximately 32 minutes. Although it was expected that the interviews would last for at least 20 minutes in order to cover the topic in sufficient depth, each interview (not including experiencing the VR retail applications and completing ethics) lasted minimum seven minutes and maximum 17 minutes. This was because the majority of participants stated they were limited on time and could afford maximum 15 minutes, and with reviewing ethics and experiencing the VR retail applications, the process often exceeded this time.

Indeed, interviews conducted in environments where people are in a rush (e.g. malls, airports or fast-food restaurants) often last from several minutes, and it is suggested to use few, short open-ended questions that are relatively easy to answer (Wilson, 2013). As with the industry interviews, the interviews were audio recorded and transcribed into a word document within a maximum of three days after the interview was conducted (see 12.8 for interview transcripts). Specialised qualitative data analysis tools (e.g. NVivo) are recommended for when larger interview numbers or large amounts of open-ended data is gathered (Wilson, 2013). Although only twelve shorter interviews were gathered, the interview transcripts were inputted into NVivo 12 for analysis in order to manage the data more efficiently. The thematic analysis process is discussed in more depth in section 5.4.3.

5.4.2.3 Instrument Design

In total, the data collection instrument consisted of fourteen key questions including three main opening questions, ten main interview questions and one closing question. Using opening questions that are less sensitive (e.g. demographics and prior VR usage) is often recommended to allow the participant to become comfortable with the question and answer process, to establish a sense of rapport, and to demonstrate an interest with the interviewee prior to conducting the interview (Friesen et al., 2010). Failure to establish rapport could lead to the interviewees being reluctant to answer all the questions fully and honestly (Friesen et al., 2010). The final questions provided the participant the opportunity to ask any questions and/or add any additional points they feel had not been addressed. The main interview questions were categorised by topic with easy questions asked first (Wilson, 2013). The interview questions consisted of ten open-ended questions each with

between one and three probing questions (i.e. sub-questions) to elicit more detailed and elaborate responses to key questions (see 12.6.3). The key areas that were broadly explored included participants internal response to the VR retail environment cues and how this might influence participants' behavioural intentions. Additionally, the general usability of VR was explored. The interviews concluded with one closing question asking participants whether they have any additional comments and/or questions to ask.

5.4.2.4 Pilot Study

A pilot study was conducted with the first two participants as a pre-test of the reliability of the instrument design and interview schedule and to increase the likelihood of success in data collection (Hassan, Schattner, and Mazza, 2006; van Teijlingen and Hundley, 2001; Baker, 1994). The pilot study revealed that the instrument design was sufficient in addressing the topic of interest and little changed in terms of the wording and content of the questions of inquiry. Both participants provided useful insights into the topic and were from the target population, therefore, it seemed inappropriate to eliminate the findings given that the interview questions remained largely the same. Indeed, contamination could arise when pilot study data is included in the main results or where pilot participants are included in the main study, but new data are collected from these people (van Teijlingen and Hundley, 2001).

However, in comparison to quantitative studies, it is argued that contamination is less of a concern in qualitative research, and if little change is required to the data collection instrument, then the pilot study data may be used, therefore, researchers often use some or all their pilot data as part of the main study (Connelly, 2008; van Teijlingen and Hundley, 2001). In this study, the minor improvements included the wording of two questions to make them clearer to the target sample and ensure the questions were interpreted as intended. As additional interviews were collected and simultaneously transcribed and analysed, this helped to improve the later interviews and explore new topics that emerged from the earlier interviews. This method is common among qualitative research according to van Teijlingen and Hundley (2001), hence, some have argued that pilot studies are not necessary in qualitative approaches (Holloway, 1997).

van Teijlingen and Hundley (2001) argued that researchers have an ethical obligation to make best use of their research experience by reporting issues arising from all parts of the study, including the pilot phase. Two main problems were identified when conducting the pilot study. Firstly, the logistical problem was associated with reliable WIFI connectivity in the city centre. The VR retail applications used for this study were only available when connected to WIFI, therefore, this restricted the ability to move from the WIFI hotspot in the city centre to approach participants. This was problematic because the first participant who agreed to take part in the pilot study was limited on time, and when WIFI connectivity was lost, the participant became disinterested and then did not have enough time to participate. To overcome this problem, multiple WIFI hotspots were located within a specific vicinity, and later, a portable WIFI device was used for the final interviews.

The second issue was associated with time. The pilot study provided an indication on the amount of time it would take to recruit participants and the amount of time the target population were willing to dedicate to this study. Several potential participants were approached and declined participation prior to the first participant agreeing to take part in the interview. This slow process continued which meant that the data collection took twice the amount of time than originally planned (total of four days instead of two days). Also, the anticipated interview duration was 20 minutes, however, in reality the interviews were considerably shorter due to participants time constraints and the environment the interviews were collected in.

To recruit participants, the researcher approached people in the city centre and asked their willingness to participate in this study, which involved the testing of two VR retail applications followed by a one-to-one interview. The interviews were conducted in Manchester City Centre for ease of access to the population. Once participants agreed to take part, the researcher and participant agreed on a suitable location to conduct the experiment (i.e. nearby bench or café as participants needed to be seated when experiencing VR). Then, participants were briefed on the research project and about their involvement in the study in accordance to the supporting ethics documents (see 12.5).

Once the opening questions had been asked, participants experienced the VR retail applications and the main interview questions followed.

Table 5.2 provides an overview of participants' demographic profile including age group, gender, occupation and type of visitor according to the visitor categorisation outlined above. Additionally, the table includes the participant number used for the analysis, the interview duration, participants' prior VR usage and the main leisure activities they take part in when visiting cities. This information was provided by participants prior to them experiencing the VR retail applications and participating in the interview. For the analysis, participants were coded from VP1-VP12 (i.e. Visitor Interview 1 = VP1). The code was provided based on the order of the interviews only. The first two interviews were recorded as pilot tests and were included in the data set as previously discussed.

Table 5.2 Interview Participants' Demographic Profile

Age Group	Gender	Occupation	Visitor Type	Leisure Activities	Interview Duration	Participant No.	Used VR Before
45-54	F	Employed	Same day visitor	Retail and restaurants	7 minutes 52 seconds	VP1	No
35-44	M	Employed	Leisure day visitor	Socialise and retail	15 minutes 45 seconds	VP2	Yes
22-34	M	Employed	Leisure day visitor	Retail and exploring new places	13 minutes 45 seconds	VP3	No
45-54	M	Self-employed	Leisure day visitor	Socialise and retail	7 minutes 1 second	VP4	No
22-34	M	Self-employed	Leisure day visitor	Socialise, nightlife, restaurants, and retail	8 minutes 16 seconds	VP5	Yes
22-34	M	Employed	Leisure day visitor	Socialise, nightlife, restaurants, and retail	8 minutes 16 seconds	VP6	No
22-34	F	Student	Same day visitor	Retail, nightlife, and restaurants	7 minutes 1 second	VP7	No
35-44	M	Employed	Same day visitor	Retail, nightlife, and restaurants	7 minutes	VP8	No
22-34	F	Employed	Same day visitor	Retail, nightlife, and restaurants	14 minutes 56 seconds	VP9	Yes
22-34	F	Employed	Same day visitor	Retail, nightlife, and restaurants	14 minutes 56 seconds	VP10	Yes
18-21	F	Student	Leisure day visitor	Retail and restaurants	16 minutes 40 seconds	VP11	No
22-34	M	Self-employed	Leisure day visitor	Socialise, retail, restaurants, and nightlife	16 minutes 40 seconds	VP12	No

(Source: Authors own)

Participants' demographic profile indicated an age range between 18 and 54 years old, with over half of participants aged between 22 and 34 years old. Five females and seven males participated. Regarding occupation, over half of participants were employed, two were students and three were self-employed. All participants were from across the UK and stated that retail is the main reason, or one of the main reasons, they frequently visit cities. Additional leisure activities included socialising, nightlife, restaurants and to explore new places/sightsee. Only four out of twelve participants had experienced VR before and none of the participants had previously experienced the VR retail applications used in this study.

As previously mentioned, the two VR retail applications are referred to as (1) Application A (360-degree video) and (2) Application B (interactive store). Participants experienced Application A first, followed by Application B. Both VR retail applications that were used were based in Dubai, however, the interview questions were asked more generally in order to encourage participants to consider the use of VR retail applications for marketing urban shopping destinations more broadly. The two VR retail applications were used because they were considered the most appropriate to provide participants with an idea of how VR could be used in the shopping destination context.

More specifically, Applications A was chosen because it highlighted the urban tourism destination more broadly, therefore drawing on the urban tourism/urban place marketing aspect of this study. Accordingly, Application A provided participants with a 360-degree "virtual tour" of the urban shopping destination, Dubai, highlighting the top tourist attractions (e.g. Burj Khalifa), shopping malls (e.g. Dubai Mall) and traditional markets (e.g. Gold Souk and Spice Souk). This application was viewed using a Samsung Gear VR and utilised the Samsung S7 Edge smartphone and the experience was approximately 3 minutes and 30 seconds in duration. This was more of a passive experience and participants were not able to interact with the virtual environment.

In comparison, Application B was a more interactive experience, which involved participants beginning in a shopping mall (i.e. Dubai Mall) and having to navigate their way into a retail store (i.e. The Body Shop). Once in the retail store, participants could look around and browse at products, although there was limited ability to select and

inspect products. Participants were instructed on how to navigate inside the shop using the VR HMD. Navigation through the virtual environment was via eye movement and no controllers were used. More specifically, each participant was asked to move inside the store using the interactive arrows, browse the store, and then make their way back out of the store and into the shopping mall. No time restrictions were imposed on the virtual experience. However, through observation it was noted that Application B took an average of 90 seconds – 2 minutes per participant. This was dependent on the perceived ease of use experienced by each participant with regards to navigating around the virtual retail environment. The two VR retail applications were purposely selected to provide participants with an idea of how VR could be used in the context of urban shopping destinations, to identify the influence of various virtual stimuli on visitors' behavioural response, and to identify the most preferable aspects from the visitor perspective, in terms of VR experience design and usability in this specific context.

Figure 5.2 Application A, 360-degree YouTube video

Figure 5.3 Application B, Interactive 3D computerised store

With regards to participant health and safety, the researcher decided to take extra precautions to guarantee participants wellbeing throughout the experiment (Schnack et al., 2018). Early research suggested that individuals that are not in their usual state of fitness due to illness (e.g. due to flu, ear infection, hangover, sleep loss or taking medication that could affect visual or vestibular function) should avoid exposure to VR environments (Frank et al., 1983; McCauley and Sharkey, 1992). Using a HMD could potentially lead to simulator induced motion-sickness (Keshavarz and Hecht, 2011), which could be explained by the sensory conflict theory (Reason and Brand, 1975), which links symptoms to a disconnection between visual and vestibular diseases (Schnack et al., 2018). Specifically, sensory conflict theory is a proposed explanation for motion sickness according to passive movement that creates a mismatch between information relating to orientation and movement supplied by the visual and vestibular systems and it is this mismatch that induces feelings of nausea (Oxford Reference, 2019). The risk of such symptoms occurring are heightened in VR experiences that use unnatural navigation techniques such as hand-held input devices (Nichols and Patel, 2002). However, in the VR retail applications used in this study, there was limited ability to navigate and additional devices (e.g. handheld controllers) were not used. Therefore, the likeliness of symptoms occurring were considered not significant.

Nevertheless, prior to taking part in this study, participants were asked to confirm they had no existing medical conditions or illness, including those mentioned above, by providing written consent on the health and safety consent form (see 12.5.3.4). None of the participants recruited declared they have existing medical conditions. Participants were advised to immediately discontinue the experiment should they become unwell (Schnack et al., 2018). As a precaution, participants were asked to remain seated for a couple of minutes after concluding the experiment to readjust to the physical environment (Schnack et al., 2018). This was not a problem as the one-to-one interview was conducted immediately after experiencing the two VR retail applications. Only one participant experienced minor feelings of nausea when experiencing Application A. No other cases of motion sickness were reported during the qualitative data collection. Wiles and Boddy (2013) stated that social science research on a wide range of topics could generate emotional responses and it is important to be sensitive to research participants' feelings.

Therefore, the researcher monitored participants' body language for signs of fatigue or distress throughout the entire data collection.

5.4.3 Thematic Analysis

Thematic analysis was employed to analyse both the industry interview data and the visitor interview data; therefore, this section provides a thorough explanation of how this method was conducted for both data sets on a separate basis. Thematic analysis is a systematic approach involving the identification of meaningful themes, coding and classifying textual data accordingly, and interpreting the data by seeking commonalities, relationships or theoretical constructs (Mills et al., 2010). Guest et al., (2012) argued that thematic analysis is the most useful analysis technique for capturing the complexities of meaning within a textual data set. Given the exploratory nature of both sets of qualitative interviews, thematic analysis seemed most appropriate to draw out emergent themes.

For both sets of interviews, each interview recording was transcribed in a separate word document and analysed using thematic analysis in NVivo 12 software. Using thematic analysis allowed for the identification of similar themes between participants' answers (Schnack et al., 2018). The analysis process started during data collection, where the researcher began to notice and look for patterns of meaning and issues of potential interest in the data (Braun and Clarke, 2006). From here, the analysis of the interviews was conducted in accordance with the procedure outlined by Braun and Clarke (2006). However, during analysis the researcher often moved back and forth between the entire data set, the coded extracts of data under analysis, and the analysis of the data that is being produced (Braun and Clarke, 2006), Therefore, even though the data is discussed consecutively, the data collection was not a linear, step-by-step process (Ponelis, 2015; Braun and Clarke, 2006). Rather, it was recursive in that the researcher iterated between the different levels of analysis throughout the data collection process (Ponelis, 2015; Braun and Clarke, 2006).

First, familiarity with the transcripts was gained by reading them repeatedly and noting ideas throughout (Gill et al., 2012). According to Boyatzis (1998), drawing themes from the literature is one of the most used methods in thematic analysis. Taking a theoretical approach and engaging with the literature prior to analysis could enhance the analysis by

sensitising the analyst to more subtle features of the data (Tuckett, 2005). Therefore, for the visitor interviews only, the initial themes were those drawn from the reviewed literature and applied to the VR context and included the VR retail environment, visitors' internal response and behavioural intentions. Within these main themes, the exploratory interviews aimed to draw out emergent sub-themes. This step was not taken during the industry interviews as they aimed to gain general perspectives from urban place marketers' views on the use of immersive technologies for urban place marketing. Having said that, the researcher's prior knowledge of firm level adoption of new technologies helped to inform the direction of the interview questions.

Following this, sections of the transcripts were manually highlighted to indicate significant statements (Holliday et al., 2007). In order to ensure rigour and that all codes had been identified and all statements included, this process was conducted three times before inserting the transcripts into NVivo 12 where the highlighted statements were then coded again using the software. Commonalities between participants' answers were analysed in order to identify key themes and sub-themes that were connected to the research questions (Schnack et al., 2018). When coding the direct quotations, the main themes were confirmed or determined, and sub-themes began to emerge under each main theme including those confirmed in prior studies and sub-themes specific to this study's context.

During this stage, the codes became themes and sub-themes, and in order to achieve this, some codes that were seen to fit together where classified as one theme/sub-theme. Then, the themes and sub-themes were checked and reviewed against the entire data set to establish if they worked in those contexts (Gill et al., 2012) and to form a coherent pattern. This process was used to ensure all themes and sub-themes were mutually exclusive (i.e. they do not overlap) and exhaustive (i.e. all data is included) and to identify those themes and sub-themes that were new to the study context. A thematic table was developed demonstrating the initial codes and final themes and sub-themes (see 12.10). Finally, the report of the content and meaning of patterns (themes) in the data set was produced (Ryan and Bernard, 2000) and a discussion presented drawing on the reviewed literature.

5.4.4 Qualitative Framework Development

A total of ten hypotheses were developed based on the thirteen sub-themes that emerged from the visitor interview data and consistent with prior research. Based on this, a qualitative VR Visitor Behaviour S-O-R model was developed. In the proposed model, the sub-themes became variables (Creswell and Clark, 2006). The proposed model was tested in the following quantitative research phase.

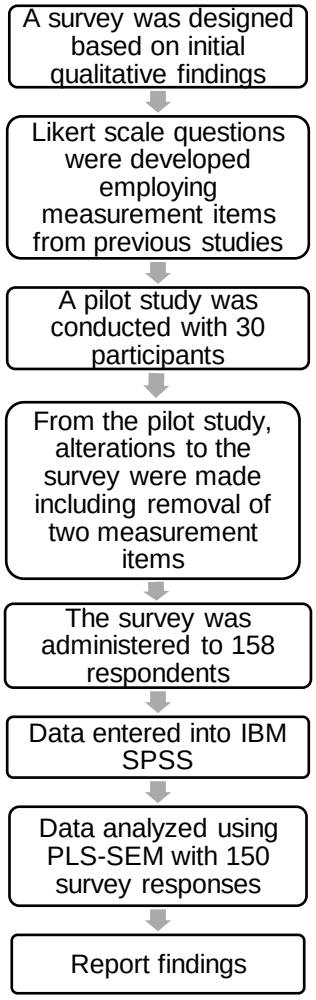
5.5 Research Phase 2: Quantitative Survey

Research phase two contributed to achieving objective three, which was to validate a proposed model portraying the influence of the VR retail environment cues on visitors' behaviour in an urban shopping destination context. Research phase two employs survey technique to evaluate visitors' behavioural response to VR retail environments. The sub-themes identified in the qualitative study were integrated into the proposed research model as constructs. From here, a survey was developed and a pilot study with 30 potential urban shopping destination visitors were conducted to test the validity and reliability of the measurement model (French, 2017). Following the validation and refinement of the survey instrument, data were collected with 158 (150 included in the analysis) potential urban shopping visitors to test the structural model and hypotheses that were formulated (French, 2017). Prior to any survey data collection, informed consent was gathered from each participant (see 12.11).

5.5.1 Survey Process

Survey method is widely used in social science research and involves asking the subjects of interest questions either face to face, over the telephone, or via questionnaires of individuals or companies (Adams et al., 2014). This method lends itself to a more quantitative approach given that the aim is to collate answers to a number of questions (Adams et al., 2014). In order to ensure the survey is well designed and formulated, Adams et al., (2014) suggested following the survey process. Figure ***5.4*** provides an overview of the suggested survey process adapted to this study.

Figure 5.4 The Survey Process



(Source: Adapted from Adams et al., 2014)

Previous VR studies have employed a survey technique (e.g. Disztinger et al., 2017; Gibson and O'Rawe, 2017), which supports the usefulness of this technique for such research. For example, Gibson and O'Rawe (2017) gathered 129 responses from consumers at two consumer travel shows, where participants experienced 360-degree VR videos of various activities in Ireland. Constructed along the dimensions of the TAM (Davis 1989), their study explored consumers' attitudes and experiences of VR. This study concluded that using VR for destination marketing greatly increases the likelihood of visiting the destination itself in the future (Gibson and O'Rawe, 2018). Similarly, Disztinger et al., (2017) developed a 36-item survey based on the TAM (Davis, 1989) in

their study investigating tourists' technology acceptance of VR for travel planning. They used Google Street View, which allowed 148 participants to virtually visit a potential holiday destination of their choice prior to completing the survey. The results of this study indicated significant effects of perceived immersion, interest, perceived enjoyment and perceived usefulness on the intention to use VR for travel planning (Disztinger et al., 2017).

5.5.2 Instrument Development

Instrument development was conducted in three stages including scale development, assessing content validity and then conducting a pilot test. First, the scale was developed using self-report method and 7-point Likert scale measures (1= strongly disagree to 7 = strongly agree) drawing on items from previous studies and adapting them to the study context to produce the survey content. Likert scales are commonly used in social science research (Croasmun and Ostrom, 2011) and self-report approach is the most common method used to capture tourists' emotional responses (Kim and Fesenmaier, 2014; Li et al., 2015; Correia et al., 2017). This approach was also considered appropriate as it is useful in allowing participants to express their attitudes and emotional reactions through open-ended questions or rating their cognitive/emotional state on a set of cognitive/affective items without researchers' inference (Hosany and Gilbert, 2010; Hosany and Prayag, 2013; Kyle and Lee, 2012; Chamberlain and Broderick, 2007; Jacobs et al., 2012; Mauss and Robinson, 2009).

Second, content validity is defined as the ability of the selected items to reflect the variables of the construct in measure (Zamanzadeh et al., 2015). Content validity was determined using viewpoints of a panel of experts including content experts (i.e. professionals who have research experience or work in the field) and lay experts (i.e. potential research subjects) (Zamanzadeh et al., 2015). In this study, the content experts were the three project supervisors with expertise in the relevant fields. The lay experts were potential research subjects that were randomly selected by convenience sampling. Selecting subjects of the target group as experts ensured that the population for whom the instrument is being developed is represented (Rubio, Berg-Weger, Lee, and Rauch, 2003). Gathering feedback from the expert panel was also useful to gain information on

the representativeness and clarity of items and helped to improve the instrument through recommendations for improvement (Polit, Beck, and Owen, 2007; Polit and Beck, 2006).

Finally, a pilot test was conducted in order to test the data collection instrument, sample recruitment strategy, and identify potential problem areas in the research protocol in preparation for the larger study (Lancaster, Dodd, Williamson, 2004; Kraemer, Mintz, Noda, Tinklenberg, and Yesavage, 2006; Connelly, 2008). In this study, a pilot study was conducted with 30 survey participants in order to ensure that potential practical problems in the main study protocol could be identified in this initial phase (Peat et al., 2002). Jairath, Hogerney, and Parsons (2000) suggested that a convenience sample may be used in the pilot study, while a more representative sample is required in the larger study. However, others have argued that it is important that the sample for the pilot is representative of the target study population and based on the same inclusion/exclusion criteria as the main study (Thabane et al., 2010). Studies have recommended a sample size of 10 participants for the pilot study (Nieswiadomy, 2002), while others have suggested the sample should be 10% of the projected sample for the larger study (Connelly, 2008; Lackey and Wingate, 1998). However, Hertzog (2008) argued that certain studies may require larger sample size depending on the aim of the full study, although samples as small as 10-15 per group may sometimes be sufficient. Others have suggested 20 participants (Hassan et al., 2006) or between 10 and 30 participants provide many practical advantages such as simplicity, easy calculation and the ability to test hypotheses (Isaac and Michael, 1995; Hill, 1998). Therefore, consistent with the population for this study and drawing on recommendations for sample size, a sample of 30 potential shopping visitors were selected as sample for the pilot study.

The survey was administered to pilot subjects in the exact same way it was expected to be administered in the main study. During the pilot, the time taken to complete the ethics form, experience the VR retail application and then complete the survey was recorded as suggested by Peat et al., (2002). Completing the ethics form took approximately one minute and experiencing the VR retail application took between two and three minutes. The survey took between five and ten minutes to complete, which was considered reasonable for this study. Participants were asked for feedback to identify ambiguities

and difficult questions (Peat et al., 2002) and from this phase, only small changes were made to the survey. The questions that were identified as unnecessary, difficult or ambiguous were eliminated from the survey (Peat et al., 2002), and in total this included two questions.

One question was related to demographics and was eliminated because it was considered not entirely important during this phase of data collection (see 12.12). The other question was reworked into two separate questions, given that feedback from participants was that the statement was implying two separate points. The survey questions were reviewed in order to assess whether they gave adequate range of responses and established replies that can be interpreted in terms of the information that is required (Peat et al., 2002). The completed surveys were reviewed in order to ensure all questions were answered and any questions that were not answered as expected were re-worded (Peat et al., 2002). The following section provides more detail on the results of the pilot study.

5.5.3 Pilot Study Results

Pilot data were input into IBM SPSS 25 for the analysis and descriptive statistics were initially produced to accurately describe and summarise the data set (Hinton, 2014) gathered from 30 respondents. The majority of participants were male (80%), aged between 22-34 years (80%), either employed (50%) or self-employed (40%), with an annual pre-tax income of between £10,000 and £29,000 (76.7%). All participants were from the UK.

The measurement items are presented in Table ***5.3***. The measurement items were selected based on studies investigating the constructs in similar contexts including the relevant topic areas reviewed in this research (e.g. immersive technologies, online shopping, mobile shopping etc.). In order to test the internal consistency (i.e. the reliability of the survey measurement items), the reliability test Cronbach's alpha, which is the most common measure of scale reliability (Field, 2005), was carried out on all ten variables. Reliability testing is commonly used when the survey is developed using multiple Likert scale statements. In this study, multiple Likert scale statements were used, and the Likert scale responses were coded from one to seven where 1 = strongly disagree and 7 =

strongly agree as previously mentioned. The usability scale included two usability items that had to be reverse coded for the analysis.

Table 5.3. Measurement Items

Construct	Measurement Items	References
Virtual atmospherics	1. Unattractive/attractive	Wu and Wang (2013)
	2. Dull/bright	Wu and Wang (2013)
	3. Unlively/lively	Wu and Wang (2013)
	4. Boring/stimulating	Wu and Wang (2013)
	5. Unexciting/exciting	Wu and Wang (2013)
Virtual aesthetics	1. Monotonous/fascinating	Wang et al., (2011)
	1. Conventional/creative	Wang et al., (2011)
	2. Unremarkable/impressive	Wang et al., (2011)
	3. The aesthetics of the VR shopping application promotes a perception of quality.	Rose et al., (2012)
	4. The look and feel of the virtual shopping environment are important when using VR to shop.	Rose et al., (2012)
Interactivity	5. The VR shopping application has a high degree of interactivity.	Daft and Lengel (1986); Liao (2006)
	6. I can interact with the VR shopping application in order to get information tailored to my specific needs.	Campbell et al., (2008); Loiacono et al., (2002)
	7. The interactivity functions allow me to customise content.	Daft and Lengel (1986) also used in Liao (2006)
	8. The interactivity functions can satisfy my requirements.	Daft and Lengel (1986) also used in Liao (2006)
	9. The VR shopping application has interactive features, which help me accomplish my task.	Campbell et al., (2008); Loiacono et al., (2002)
Social presence	1. I would prefer if there was a sense of sociability in the VR shopping application.	Hassanein and Head (2007); Gefen and Straub (2003)
	2. Using the VR shopping application to interact with others would create a sociable environment for shopping.	Hassanein and Head (2007); Gefen and Straub (2003)
	3. Using the VR shopping application to interact with others would create a personal environment for shopping.	Hassanein and Head (2007); Gefen and Straub (2003)
	4. Using the VR shopping application to interact with others would create a warm environment for shopping	Hassanein and Head (2007); Gefen and Straub (2003)
Layout design	*1. Good displays/Bad displays**	Wu and Wang (2013)
	2. Helpful signage/Unhelpful signage	Wu and Wang (2013)
	3. Easy to navigate/Difficult to navigate	Wu and Wang (2013)
	4. Organised layout/Unorganised layout	Wu and Wang (2013)

Usability	1.	I thought the VR shopping application was easy to use.	System Usability Scale (SUS)
	2.	I felt confident using the VR shopping application.	System Usability Scale (SUS)
	3.	I found the VR shopping application very awkward to use.	System Usability Scale (SUS)
	4.	I needed to learn a lot of things before I could get going with the VR shopping application.	System Usability Scale (SUS)
	5.	I would imagine that most people would learn to use the VR shopping application very quickly.	System Usability Scale (SUS)
Presence	1.	After experiencing the VR shopping application, I felt like I came back to the "real world" after a journey.	Van Kerreboeck et al., (2017a, 2017b); Debbabi et al., (2010); Coyle and Thorson (2001)
	2.	The VR shopping experience created a new world for me.	Van Kerrebroeck et al., (2017a); Coyle and Thorson (2001)
	3.	The virtual world suddenly disappeared when I took off the VR headset.	Van Kerrebroeck et al., (2017a); Coyle and Thorson (2001)
	4.	While I was experiencing the VR shopping application, I felt like I was in the shop.	Van Kerrebroeck et al., (2017a); Coyle and Thorson (2001)
	5.	While I was experiencing the VR shopping application, I sometimes forgot that I was in the middle of an experiment.	Van Kerreboeck et al., (2017a, 2017b); Debbabi et al., (2010); Coyle and Thorson (2001)
	6.	While I was experiencing the VR shopping application, my body was in the room, but my mind was inside the virtual world.	Van Kerreboeck et al., (2017b); Debbabi et al., (2010);
Attitude	1.	Positive/negative	van Kerrebroeck et al., (2017b); Yim et al., (2017)
	2.	Favourable/unfavourable	Van Kerrebroeck et al., (2017b); Yim et al., (2017); Michon et al., (2005)
	3.	Interesting/uninteresting	Van Kerrebroeck et al., (2017b)
	4.	Unpleasant/pleasant	Yim et al., (2017)
Emotional arousal	1.	Amusement	Izard (1977); Huang et al., (2013)
	2.	Interest	Izard (1977); Huang et al., (2013)
	3.	Contentment	Izard (1977); Huang et al., (2013); Rose et al., (2012); Novak et al., (2000)
	4.	Joy	Izard (1977); Huang et al., (2013)
	5.	Delight	Izard (1977); Huang et al., (2013)

	*6. Relaxed**	Izard (1977); Rose et al., (2012); Novak et al., (2000)
	7. Sad	Izard (1977)
	8. Anxious	Izard (1977)
	9. Fear	Izard (1977)
	10. Anger	Izard (1977)
	11. Distress	Izard (1977)
Behavioural intentions	1. I gained an interest in actually visiting in person the shopping destination viewed in VR.	Huang et al., (2013)
	2. I intend to visit the places featured in VR.	Huang et al., (2013)
	3. I want to try to visit the shopping destination viewed in VR in the future.	Huang et al., (2013)
	4. I am willing to recommend this VR shopping application.	Van Kerrebroeck et al., (2017b); Abarbanel et al., (2015); Huang et al., (2013); Zeithaml et al., (1996)
	5. I will encourage friends and family to use the VR shopping application.	Choi and Kandampully (2018); Van Kerrebroeck et al., (2017b); Zeithaml et al., (1996)
	6. If asked, I will say positive things about the VR shopping application.	Choi and Kandampully (2018); Van Kerrebroeck et al., (2017b); Abarbanel et al., (2015); Zeithaml et al., (1996)
	7. Assuming I have access to the VR shopping application, I intend to use it.	Disztinger et al., (2017)
	8. I will return to the VR shopping application the next time I need a high-tech product.	Ettis (2017); Coyle and Thorson (2001)
	9. It is very likely I will return to using VR for shopping.	Yim et al., (2017)
	10. I intend to purchase through VR shopping applications in the near future.	Ettis (2017); Gao and Bai (2014); Wu and Wang (2013); Yoo and Donthu (2001); Dodds (1991)
	11. It is likely I will purchase through VR shopping applications in the near future.	Wu and Wang (2013)
	12. My willingness to buy through VR shopping applications is high.	Prashar et al., (2017); Gao and Bai (2014); Dodds (1991)

(Source: Authors own)

Reliability analysis was carried out on all variables. The generally agreed acceptable reliability level for Cronbach's alpha is 0.7 (Hair et al., 2006) and in this study Cronbach's alpha showed the survey to reach acceptable reliability for virtual atmospherics (α = .887), virtual aesthetics (α = .736), interactivity (α = .686) and usability (α = .871), which all consisted of five items, and social presence (α = .932) and attitude (α = .939), which both consisted of four items, and finally, presence (α = .891), which consisted of six items. Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted. Additionally, the corrected item-total correlation was all above .3 meaning that each question is reliable because it has a positive relationship with the overall total of the survey (Hinton, 2014).

However, for layout design (four items) Cronbach's alpha was relatively low (α = .696) and item one (good displays/bad displays α = .799) would increase this figure if deleted. The corrected item-total correlation was also lower than .3 (.241) demonstrating a negative relationship between the individual question and the overall total score of the survey, which indicated that the question might be poor on reliability and could negatively affect the findings from the whole scale (Hinton, 2014). Therefore, this item was removed, and the test ran again leading to higher α value (α =.799). The results then indicated that the remaining three items would lower Cronbach's alpha if deleted, which meant they are all worthy of retention.

Cronbach's Alpha was also performed on emotional arousal (eleven items) (α = .463), which employed Izard's (1977) Differential Emotions Scale. The alpha for this scale was relatively low, which indicated that certain items are not correlating well with one another. Therefore, the item with the highest alpha (relaxed, α = .838) was removed and the test was conducted again. The results showed α = .838 and all items except three (fear, α = .852, anger α = .841, and distress α = .841) were lower than or equal to alpha. However, because they were only slightly higher, the items were not removed and the final number of items for emotional arousal was ten.

Finally, for behavioural intentions consisting of twelve items, Cronbach's alpha was performed separately for intent to visit (α = .805), intent to recommend (α = .894), intent to use (α = .849) and intent to purchase (α = .948) and then on all variables together (α =

.905). All items were worthy of retention when conducting Cronbach's alpha separately and together.

Overall, the pilot tested whether the survey was comprehensible and appropriate, and that the questions were clearly defined, clearly understood and presented in a consistent manner (Hassan et al., 2006). Minor revisions were made on the survey for the data collection and this included the removal of one item for positive emotions (relaxed) and one item for layout design (good displays/bad displays). Final Cronbach's alpha for all variables are presented in Table ***5.4*** below.

Table 5.4 Final Cronbach Alpha for all variables

Variable	Cronbach's Alpha	No. of Items before Cronbach's alpha	No. of Items after Cronbach's alpha
Virtual atmospherics	α = .887	5	5
Virtual aesthetics	α = .736	5	5
Interactivity	α = .686	5	5
Social presence	α = .932	4	4
Layout design	α = .799	4	3
Usability	α = .871	5	5
Presence	α = .891	6	6
Attitude	α = .939	4	4
Emotional arousal	α = .838	11	10
Behavioural intentions	α = .905	12	12

(Source: Authors own)

Overall, the pilot study was useful for providing raw data to test data entry and data processing procedures (Ruel, Wagner, and Gillespie, 2015). Additionally, preliminary coding and analysis were conducted in order to test the accuracy and capability of data analysis programs, which confirmed that the data input, management, and coding were

properly, effectively and precisely executed in a timely manner (Ruel et al., 2015). Although the results from the pilot study were not meaningful, they were useful to test the viability and efficacy of the survey process (Ruel et al., 2015). Following on from here, the survey was refined based on the pilot study findings. The following sections provide more detail on the survey population, sample size and data collection process, followed by the employed data analysis technique of Partial Least Squares Structural Equation Modelling (PLS-SEM) for the main survey data collection.

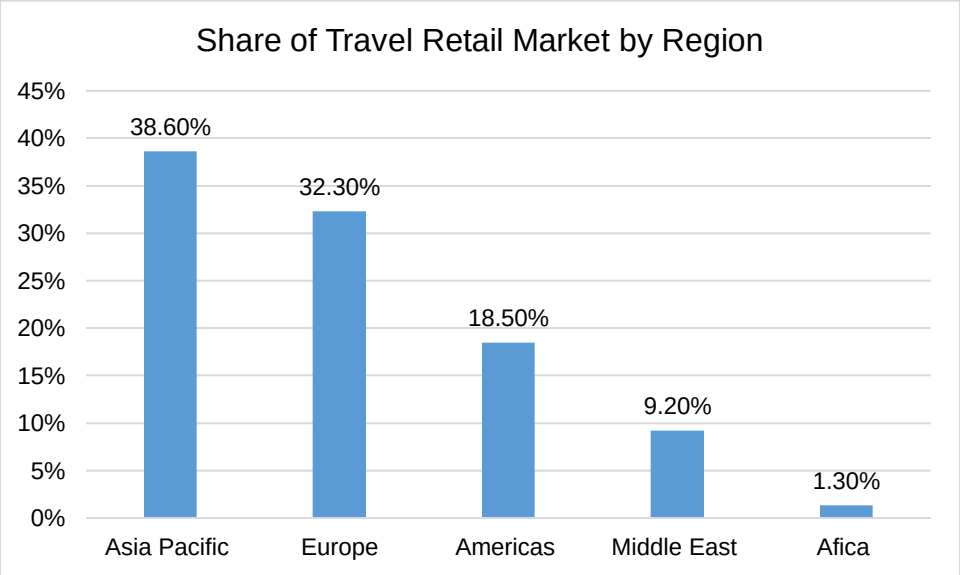
5.5.4 Survey Population, Sample Size and Data Collection Process

Quota sampling is a type of non-probability, stratified sampling that is entirely non-random (Saunders et al., 2016; Barnett, 2002). It is based on the premise that the selected sample will represent the target population because the variability in the selected sample for various quota variables is the same as that of the target population (Saunders et al., 2016; Barnett, 2002). This method involves collecting data until the pre-determined number of people (i.e. the quota) within each of a number of different categories has been achieved (Greenfield and Greener, 2016). The categories can be defined by attributes such as age, gender and working status (Greenfield and Greener, 2016). The selection of quota variables is important in order to increase the likelihood of the sample being reasonably to highly representative and to reduce the risk of bias (Saunders et al., 2016). Therefore, quota sampling was used for the survey data collection in order to gather data from a specific population of VR users combined with the typical demographic of individuals who travel for shopping based on prior marketing research outlined below.

According to a report by Nielsen (2017a), 44% of people interested in purchasing a VR device where between the ages of 18 and 34. Similarly, Greenlight VR (2015) gathered 2,282 responses from internet users aged 10 years and over in the US and found that 73% of respondents aged between 18 and 34 years (millennials), 70% of respondents aged between 35 and 50 years (Generation X), and 64% of respondents aged between 51 and 69 years (Baby Boomers) were interested in VR. The millennial generation in particular is heavily motivated by innovative devices and will play a major role in defining what remains popular (Nielsen, 2017a). Another report by Nielsen (2017b) found that millennials account for as much as 50% of the shoppers in the total travel retail market.

This specific market wants to be in control of their experiences and are strongly driven by search including searching for the right experience that fits their mood, interest and personality (Nielsen, 2017b). Figure ***5.5*** shows the share of travel retail by region and demonstrated that Asia Pacific is the largest travel retail market, with a 36.7% share, followed by Europe (32.3%) (Nielsen, 2017b). Additionally, the North West of England attracted higher proportions of short stay holidays from younger people and young adult holidays including those aged between 16 and 34-years old accounting for 43% of visits in 2013 (Visit Britain, 2013).

Figure 5.5 Share of Travel Retail by Region



(Source: Nielsen, 2017b)

Drawing on the statistics for both the typical VR user demographic and the demographic for global shoppers, it could be argued that the sample population for this study is mainly millennials aged between 18 and 34 years old. This is because this specific market accounts for 50% of the total travel market (Nielsen, 2017a) and demonstrated most interest in VR (Nielsen, 2017a; Greenlight VR, 2015). Additionally, 69% of men stated intent to purchase a VR device, compared with 31% of women (Nielsen, 2017a). Therefore, it could be argued that the typical VR user demographic is largely males aged

between 18 and 34-years old, and a large portion of the travel retail market is also within this age category while not specified by gender. More specifically, in order to calculate the quota sample, the target population of VR users and retail travellers was divided into mutually exclusive subgroups of age and gender. The quota for each group was based on the relevant and available data discussed above (Saunders et al., 2016). The two age groups included millennials aged between 18 and 34-years accounting for 75% of respondents, and Generation X and Baby Boomers including individuals aged between 35 and 69-years and accounting for 25% of respondents. The gender subgroups were weighted as 60% male and 40% female. A slightly larger proportion of males were targeted based on the VR statistics.

Sample sizes are often much larger in quantitative studies compared with qualitative research so that statistical methods ensuring representative samples can be used (Carey, 1993). The larger the sample size, the lower the likely of error in generalising to the population (Saunders et al., 2012). Previous VR studies employing quantitative survey method have used varying sample size of between 100 and 150 (e.g. Disztinger et al., 2017; Gibson and O'Rawe, 2017; Domina et al., 2012), 151 and 200 (e.g. Huang et al., 2016) and up to 274 participants (Shin, 2009). This study tested a VR retail application with a total of 158 participants. However, eight surveys had only been partially answered (more than 80% of questions unanswered) and were therefore not included in the analysis. This resulted in a total of 150 survey responses analysed, which seems an appropriate number based on prior studies with similar focus outlined above.

Prior to completing the survey, respondents experienced one VR retail application set in the context of an urban shopping destination (hereafter, Application C). Figure ***5.6*** shows where the user could browse through the selection of virtual products, access product information including price, add the items to the virtual shopping cart and virtually checkout. Figure ***5.7*** and Figure ***5.8*** show where the user could tailor the virtual retail environment to suit his/her preferences. The user could also change the aesthetic design of the store between a blue theme and a brown theme (Figure ***5.7***) and the user also had a choice of three urban places to be shopping in (Figure ***5.8***).

Figure 5.6 Application C1

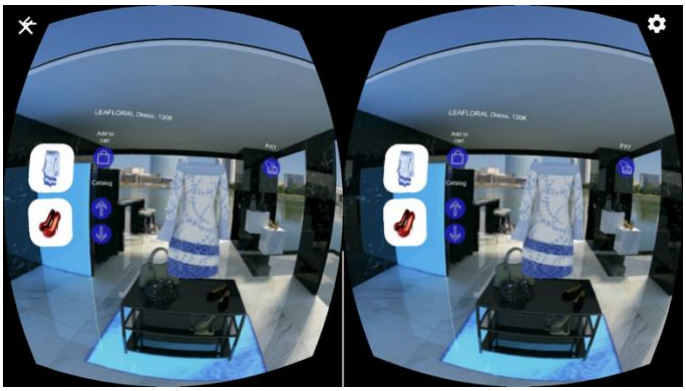


Figure 5.7 Application C2

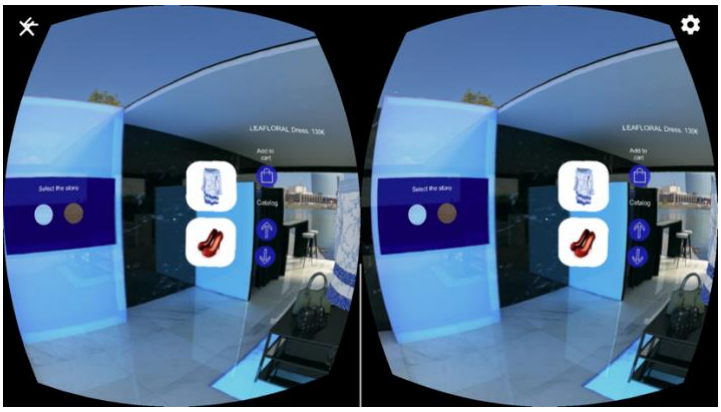
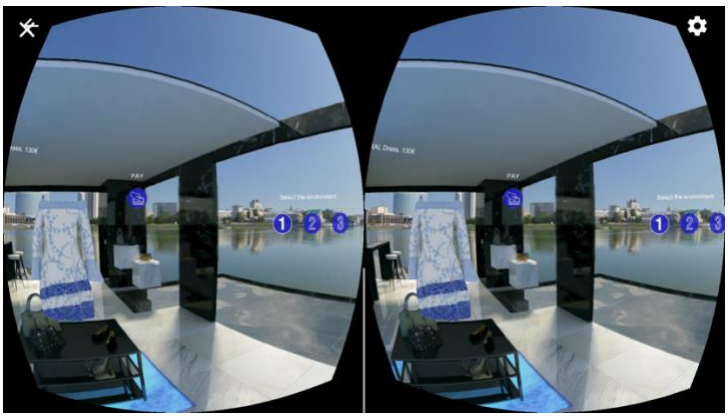


Figure 5.8 Application C3



5.5.5 Data Analysis

PLS-SEM was employed for the survey data analysis. SEM is one of the most popular statistical methodologies available to quantitative social scientists (Kaplan, 2009: Cheng, 2001) and is widely used in behavioural sciences (Hox and Bechger, 1998). The interest in SEM is the theoretical constructs represented by the latent factors and the relationships between these theoretical constructs, which are represented by regression or path coefficients between the factors (Hox and Bechger, 1998). This method has been found useful in various studies such as impulse buying behaviour in retailing (e.g. Bellini et al., 2017), consumer adoption of smart in-store technology (e.g. Kim et al., 2017), soundscape and tourist satisfaction (e.g. Liu et al., 2018), m-commerce acceptance (e.g. Liébena-Cabanillas et al., 2017) and social CRM adoption (e.g. Ahani et al., 2017). It is widely used in marketing research because it can test theoretically supported linear and additive causal models (Statsoft, 2013; Haenlein and Kaplan, 2004; Chin et al., 1996). With SEM, marketers can visually examine the relationships that exist among variables of interest in order to prioritize resources to better serve their customers (Wong, 2013). SEM is useful for tackling business research problems because unobservable, hard-to-measure latent variables can be used (Wong, 2013).

Specifically, this study takes the approach of PLS to SEM and was carried out using Smart PLS software. This particular method was employed because it is considered a good alternative to covariance-based SEM using software packages such as SPSS AMOS or Lisrel (Wong, 2013). This is particularly the case when certain situations are encountered including small sample size (Wong, 2010; Hwang et al., 2010; Bacon, 1999), and it has been applied in many research projects when there are limited participants (Wong, 2011). Many researchers have employed PLS-SEM from marketing (e.g. Henseler et al., 2009) and behavioural sciences (e.g. Bass et al., 2003), and more specifically, when investigating the role of atmospherics in museum settings (Loureiro, 2019), place attachment in tourism (e.g. Loureiro, 2014) and VR and consumer behaviour in tourism (e.g. Kim et al., 2018).

Hair et al., (2013) suggested that sample size can be driven by the following factors in SEM design: the significance level, the statistical power, the minimum coefficient of

determination (R_2 values) used in the model, and the maximum number of arrows pointing at a latent variable. According to Wong (2013), a typical marketing research study would have a significance level of 5%, a statistical power of 80%, and R_2 values of at least 0.25. Using these parameters and drawing on the guidelines suggested by Marcoulides and Saunders (2006), the minimum sample size was calculated depending on the maximum number of arrows pointing at a latent variable as specified in the structural model. Based on the maximum number of arrows pointed at a latent variable in the model being nine, the minimum sample size required is 88 (Wong, 2013). However, Wong (2013) argued that the goal should not be to merely fulfil the minimum sample size requirement and prior research (Hoyle, 1995) has suggested that a sample size of between 100 and 200 is usually a good starting point for carrying out path modelling. Therefore, it was concluded that a sample of 150 was suitable for conducting PLS-SEM analysis in this study.

5.6 Reliability and Validity

The following section discusses the reliability and validity issues that were considered for all research phases, particularly when employing mixed methods research design. Although the principles are applied differently in qualitative and quantitative research, both broadly refer to the credibility and truthfulness of the research findings. More specifically, reliability is concerned with replication and consistency, and validity is concerned with how truly representative the findings are to the phenomenon under investigation (Saunders et al., 2016).

Internal reliability refers to ensuring consistency during a research project, whereas external reliability refers to whether the data collection techniques and analytical procedures would produce consistent findings if they were replicated at a later date or with a different sample of subjects (Saunders et al., 2016; Veal, 2006). The researchers approach to questioning could reduce the scope for bias during the interviews and increase the reliability of the information obtained (Saunders et al., 2016). In order to control this, the questions were open-ended, phrased as clearly as possible so the interviewee could understand them, and probing questions were used to explore the topic in more depth as suggested by Saunders et al., (2016).

Validity is the extent to which the information collected by the researcher truly reflects the phenomenon being studied (Veal, 2006). More specifically, it refers to the appropriateness of measures used, accuracy of the analysis of the results, and the generalisability of the findings and whether conclusions can be drawn from the study design and controls employed (Saunders et al., 2016; Ryan et al., 2002). In qualitative research, contextual validity refers to the credibility of the evidence and conclusions drawn (Ryan et al., 2002), which should authentically capture the experiences of people and present the findings in a convincing text that demonstrates that the researcher fully understands the case (Lukka and Modell, 2010; Ryan et al., 2002; Golden-Bibble and Locke, 1993). According to Veal (2006), tourism studies are fraught with difficulties with validity given that the empirical fieldwork is largely concerned with people's behaviour and their attitudes. This could also apply to this study given the focus on exploring potential visitors' behavioural response through affective and cognitive states in the urban shopping destination context.

In this case, the researcher is largely depending on the individual's own reports in the form of responses to instruments including survey-based interviews and other forms of interview, which could be subject to several imperfections, meaning that the validity of tourism data can rarely be as certain as in the natural sciences (Veal, 2006). Threats to validity in qualitative research are found in the interpretation of the findings, as the selection of material presented in the study are biased and subjective to the researcher, hence, reliability of coding is necessary for validity (Dwyer, 2012; Sayre, 2001). Greenfield and Greener (2015) and Tracy (2013) suggested that two or more separate coders should ideally conduct qualitative analysis to improve the reliability and validity of the analyses and interpretations of the data. However, as this is an independent research project, the analysis had to be conducted by the main researcher only.

Adequate sampling is also a necessary for validity (Dwyer, 2012). With non-probability sampling, which was employed for the qualitative data collection, it is unlikely to make valid inferences about the entire population (Altinay and Paraskevas, 2009). This is because the sample is not representative given that all members of the entire population do not have an equal chance of being selected (Altinay and Paraskevas, 2009). In support

of this, Saunders et al., (2016) argued that when conducting semi-structured interviews, such studies cannot be used to make statistical generalisations about an entire population where the data is from a small non-probability sample. Therefore, the survey was conducted after the interviews and distributed to a larger number of responses in order to validate the proposed theoretical model and allow for generalisation of the findings. Indeed, sampling in quantitative research is important for the statistical validity of a study that will enable inferences for the entire population and generalisation of the findings (Altinay and Paraskevas, 2009). Without sensible and relevant quotas, data collected using quota sampling method could be biased (Saunders et al., 2016). In order to control this, the quota was calculated based on a range of prior marketing research and the most up to date and available statistics on two main criteria as outlined earlier in this chapter. Because the interviewer can choose within quota boundaries whom they interview, such as easily accessible respondents or those willing to answer the questions, the quota sample could be subject to bias (Saunders et al., 2016).

In survey research, internal validity or measurement validity refers to the ability of the survey to measure what the researcher intended it to measure (Saunders et al., 2016). Threats to internal validity can occur throughout the research process such as during data collection, analysis and/or interpretation, which emphasised the importance of a good research design (Ihantola and Kihn, 2011). Content validity refers to the extent to which the measurement device (i.e. the questions in the survey) provides adequate coverage of the investigative questions (Saunders et al., 2016). Greenfield and Greener (2015) stated that validity can be controlled for in survey design by ensuring the questions/items measure the construct. This was achieved by employing items used in previous studies and applying them to the study context. During the pilot study, the questions/items were also reviewed by an expert panel as suggested in prior research (Zamanzadeh et al., 2015; Polit et al., 2007; Polit and Beck, 2006), which addressed content validity (i.e. the extent to which the set of questions measure the intended construct) (Saunders et al., 2016).

Reliability is concerned with the robustness of the survey and whether it will produce consistent findings at different times under different conditions (e.g. with different samples

or with different interviewers) (Saunders et al., 2016). Reliability in the survey design was controlled for by avoiding ambiguous or vague wording in order to ensure the questions were reliable and respondents would answer the same question consistently on different occasions (Greenfield and Greener, 2015). The survey was designed to be visually pleasing and well-structured in order to maximise response rate and the reliability and validity of the survey as suggested by Saunders et al., (2016). Reliability and validity are sound in Likert scales that have at least five response categories (Greenfield and Greener, 2015), and in this study a 7-point Likert scale was employed. Furthermore, during the analysis of the pilot study data, internal consistency was calculated using Cronbach's alpha, which measured the consistency of responses.

Overall, appropriate survey design is important given that it can affect the response rate and the reliability and validity of the collected data (Saunders et al., 2016). Reliability and validity were controlled for during the quantitative data collection by allowing each participant to complete the survey immediately after experiencing the VR retail application. The researcher remained present throughout the entire data collection process, which made sure the surveys were completely and individually filled out. This also meant that questions that were misunderstood could be clarified, which minimised the overall non-response rate. The researcher checked all survey responses when they were collected in order to ensure they were fully completed. Overall, eight surveys were found to be no more than 20% complete and rather than asking respondents to complete the rest of the survey, the surveys were eliminated from the data collection as it was presumed that those respondents were disinterested in the study and would not provide thoughtful and honest answers. In the fully completed surveys, non-response rate was evident mostly in some demographic questions outlining the profile of the participant, particularly relating to income and employment status. Additionally, several surveys that seemed complete had also missed few questions throughout the survey. In these circumstances, respondents were not asked to complete the questions due to ethical reasons and data were handled accordingly when input in SPSS and Smart PLS for analysis.

5.7 Ethical Issues

As with all research, the data collection techniques employed (observations, surveys and interviews) could potentially be intrusive and provoke negative effects to participants. Therefore, as suggested by Altinay and Paraskevas (2009), ethical issues were taken into consideration and ethical approval was granted by Manchester Metropolitan University prior to conducting the research project. Valerio and Mainieri (2008, p.244) defined ethical principles as *"the standard practices for privacy and confidentiality protection for human subject participants",* which are implemented to protect participants throughout the entire study, from recruitment, to participant and data collection, to dissemination of research findings in a manner that is confidential, private, and respectful. Therefore, various ethical issues where addressed throughout the entire study and are discussed in more depth. Additionally, the research project was submitted through EThoS, which is the University's ethical approval system, and was approved by reviewers (see 12.5.1).

Central to all research ethics policy is that research participants must give their informed consent voluntarily prior to participating in the study (Gilman, 2008). This includes ensuring participants are informed of the procedures, risks and benefits associated with their participation in the study (Losch, 2008). Informed consent was obtained from all respondents during primary data collection. Participants were provided with sufficient information about taking part including the nature and purpose of the study, what is expected of them to participate and the length of time the study will take (Saunders et al., 2012; Gilman, 2008). The purpose of this step was to allow each individual to understand the implications of participation and to reach a fully informed, considered and freely given decision about whether to continue with participating in the study (Saunders et al., 2012). Participants were made aware of their right to withdraw from the study at any given point and can skip any questions they do not feel comfortable answering (Gilman, 2008). The relevant documentation can be found in the appendices including the participant information sheet, participant consent form and the health and safety consent form for all interview (see 12.5.2 and 12.5.3) and survey participants (12.11.1).

Moreover, it is vital to ensure anonymity (i.e. ensuring that the collected data cannot be associated with the study participants) of participants and confidentiality of the information provided. Therefore, participants were provided a code in order to ensure they were completely unknown to anyone associated with the study (Kennedy, 2008a). Additionally, in order to ensure the researcher could not identify the participants against the data set, all possible participant characteristics were separated from the publicly available data (Kennedy, 2008a), which included naming recordings with the assigned participant code.

Confidentiality refers to the methods taken to ensure the data is protected. This includes anonymity and is important because promises of confidentiality could improve participant cooperation were the data collection method poses some risk (Kennedy, 2008b). In this study, participants were afforded the right for their responses to be kept confidential and the right to privacy and anonymity. This was achieved by ensuring the disclosure of personal information was optional and was not forced (Gilman, 2008). It is vital to adhere to assurances about privacy, anonymity and confidentiality during the analysis and reporting of data, and variables that could lead to a violation of participants' confidentiality were not included (Saunders et al., 2012; Valerio and Mainieri, 2008). This is important because harm could result from unauthorised attribution or identification. Importantly, reliability of data is likely to be enhanced where confidentiality and anonymity are assured (Saunders et al., 2012).

Moreover, it is important to anticipate and assess risk when conducting any research study to minimise the likelihood of causing harm to the researcher and/or participants. Evaluating risk involves thinking about the likelihood of harm occurring and the extent of severity of the harm that could be caused, which could occur through risks to emotional wellbeing, mental or physical health, or social or group cohesion (Saunders et al., 2012). In this study, risk was minimised by providing a thorough advanced disclosure detailing any possible harm or discomfort that could result from survey participation (Lavrakas, 2008) such as the side effects of using VR (see 12.11).

Further, researchers have an obligation to adhere to social responsibility practices not only with research participants but also with society (Gilman, 2008). The quality of the research depends in part on the integrity and objectivity of the researcher, therefore, the

researcher acted according to the following qualities as outlined by Saunders et al., (2012): openly, truthful, promoted accuracy, and avoided deception, dishonesty, misrepresentation of data and findings, and bias (Saunders et al., 2012).

5.8 Summary

The purpose of this chapter was to outline the methods and methodologies used in this study in accordance to the pragmatistic philosophical positioning. A mixed method approach was considered most suitable to achieve the aim and objectives. An abductive approach was implemented where the study began with an inductive research approach to identify context-specific emergent sub-themes that were implemented in a proposed theoretical model. This was followed by a deductive approach to validate the proposed theoretical model in order to develop a richer theoretical understanding of the topic. Hence, this study employed mixed methods and a sequential double-phase research design including exploratory research followed by more explanatory research yet employing an exploratory form of SEM as PLS. The first part of Research Phase 1 was conducted using an exploratory approach to gain managerial perspective on the opportunities and barriers of implementing immersive technologies (AR and VR) and their future intention to adopt such technologies for marketing purposes. Exploratory semi-structured interviews were considered most suitable to understand the context and provide important background and contextual material for this study (Saunders et al., 2016). The findings informed the second part of Research Phase 1 by indicating the immersive technology that is potentially most useful and appealing to urban place marketers. Hence, the main data collection focused on VR only rather than both AR and VR.

Based on the reviewed literature, it became clear that further research is required into the relationships between VR retail environment cues and visitor's behaviour. Therefore, exploratory semi-structured interviews were conducted using convenience sampling in order to identify context-specific variables. By analysing the data using thematic analysis, themes and sub-themes emerged and hypotheses were developed, which helped to inform the proposed VR Visitor Behaviour S-O-R Model where the sub-themes became variables. This part of data collection assisted in achieving objective two, which was to

investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations. The model was validated using survey technique during Research Phase 2, and assisted in achieving objective three, which was to validate the proposed model. PLS-SEM was employed to analyse the survey data and the final theoretical model was proposed in order to achieve objective four, which was to propose a new theoretical VR Visitor Behaviour S-O-R Model and provide guidance to urban place/destination marketers. The following chapters sequentially present the findings from each research phase and this begins with the qualitative analysis of the interviews conducted with urban place marketers.

Chapter 6 – Urban Place Marketers' Interview Analysis

6.1 Introduction

The following chapter presents the qualitative analysis of the interviews conducted with urban place marketers in three UK urban shopping destinations (Manchester, Liverpool and Chester). This chapter begins with an introduction to the interview analysis and each section following this discusses the new and existing themes and sub-themes that emerged from the analysis. The chapter is then summarised indicating how the findings were used to guide the next stage of data collection, which included interviews with visitors to a UK urban shopping destination (Manchester).

6.2 Urban Place Marketers' Interview Analysis

The interviews aimed to provide insights into urban place marketers' views on the opportunities and barriers of using immersive technologies (AR and VR) to market urban places and their future intention to adopt these innovative technologies. Overall, four themes and eleven sub-themes emerged from the interview analysis as outlined in Table ***6.1*** below. The related studies refer to those studies that have also found evidence of the applicability of these constructs in other contexts such as firm adoption of other technologies (e.g. AR) and marketing channels (e.g. social media marketing). Sub-themes were considered to be *emergent* where no prior research specific to VR and urban place marketing has revealed these findings from the perspective of urban place marketers.

Table 6.1 Themes and Sub-themes

Themes	Sub-themes	Related studies
Perceived Benefits	Enhanced Destination Image	Rainoldi et al., (2018); Griffin et al., (2017)
	Increased Visitor Numbers	Tussyadiah et al., (2017); Griffin et al., (2017); Disztinger et al., (2017); Huang et al., (2013)
	Attract Global Markets	Neuhofer et al., (2012); Gretzel and Fesenmaier (2003); Cheong (1995)
	Added value to the visitor experience	Jung and tom Dieck (2016); Jung and tom Dieck (2017); Trunfio and Campana (2019); Huang et al., (2013)
Perceived Barriers	Visitor Readiness	Chandra and Kumar (2018); Chatzoglou and Chatzoudes (2016); Maduku et al., (2016)
	*Technology Access**	
Perceived Organisational Capability	*Funding Access**	Chandra and Kumar (2018); Tajudeen et al., (2018); Maduku et al., (2016); Hein and Rauschnabel (2016); Lian et al., (2014)
	Return on Investment (ROI)	O'Rawe and Gibson (2017); Keegan et al., (2017)
	*Organisational Readiness**	Hein and Rauschnabel (2016); Maduku et al., (2016); Khan and Ali (2018)
Perceived External Pressures	Competitive Pressures	Chandra and Kumar (2018); Khan and Ali (2018); Jia et al., (2017); Hein and Rauschnabel (2016); Maduku et al., (2016); Lian et al., (2014); Wang et al., (2011)
	*Industry Readiness**	

**New sub-theme found in this study*

(Source: Authors own)

The three new sub-themes comprised one *perceived barrier* (technology access), one *perceived organisational capability factor* (organisational readiness) and one *perceived external pressure* (industry readiness). To date, there is limited empirical research including exploratory qualitative studies investigating the opportunities of AR and VR from the perspective of industry professionals. In support of this, Griffin et al., (2017) indicated that VR could be beneficial for tourism marketers, however, further research is required to explore the implications and opportunities that VR provides to them. Additionally, only few studies have explored firm level adoption of immersive technologies such as AR (e.g. Chandra and Kumar, 2018; Hein and Rauschnabel, 2017). Both these studies employ the

Technology-Organisation-Environment (T-O-E) framework (Tornatzky and Fleischer, 1990), which is an influential framework that has been utilised by many other organisational technology adoption studies. Therefore, industry professionals' views and intention to adopt this technology warrants further investigation and more research is required to determine their perspectives on these technologies.

Employing an exploratory qualitative approach, the aim of the industry interviews was to explore urban place marketers' views of immersive technologies (AR and VR). In order to achieve this, the interview questions were designed to investigate 1) the perceived barriers to immersive technology implementation for a) visitors to urban shopping destinations and b) urban place marketers, and 2) a) the perceived internal organisational capability and b) the perceived external pressures associated with immersive technology implementation for urban place marketers. In doing so, their intention to adopt and implement these technologies was revealed. In order to inform the focus of this study, the interviews also aimed to determine which technology(s) (AR and/or VR) they perceived to be most effective and attractive for such industry professionals to market urban shopping destinations to potential visitors. This study broadly draws on firm-level technology adoption theory (i.e. T-O-E) and wider research in order to contextualize the findings and identify the emergent themes and sub-themes specific to this study context.

6.3 Perceived Benefits

The perceived benefits of implementing immersive technologies were broadly explored and four sub-themes emerged including enhanced destination image, increase visitor numbers, attract global markets and added value to the visitor experience.

6.3.1 Enhanced Destination Image

The findings indicated that integrating immersive technologies into the marketing strategy could enhance visitors' perceptions of the destination's image and introduce them to the city's modern image including how the city has changed and progressed over time (P1, P2, P3, P4, P7). Similarly, prior research has demonstrated that potential visitors using VR are able to develop a clearer perception of a place and a high-quality destination

image (Rainoldi et al., 2018), which could increase the actual desire to visit the place (Cheong, 1995).

> *"People are surprised what [the city] looks like now so I think to change those misconceptions through VR or AR would be useful…to show what the city looks like now, and get people thinking and change perceptions" (P4).*

P1 discussed how integrating VR could influence potential visitors to view the destination as more *"innovative"* and could be a step forward from the use of video, which is already being used as a marketing tool. In comparison to such current digital technologies, AR and VR could provide potential visitors with an insight into the experiences they will have when they are at the destination, which could improve visitor satisfaction (P1). Similarly, P2 stated that VR in particular has the potential to *"create awareness"* of newer *"world class"* attractions.

> *"Implementing AR and VR shows the destination to be more innovative…if we give people an insight into the experience they are going to get when they arrive like we do with video then they might be more comfortable about the experience" (P1).*

Additionally, the findings indicated that enhancing the destination image in the eyes of potential visitors could encourage them to visit. More specifically, allowing potential visitors to view diverse areas of the urban shopping destination in VR could positively influence the decision-making process. However, P7 highlighted the importance of people experiencing the actual city destination and argued that having people at the destination and experiencing it in real-life is perceived as not being comparable to seeing it in the virtual world. This supports the notion of using VR for marketing purposes to provide potential visitors with a taster of the destination in order to encourage them to visit while emphasising the importance of creating realistic VR city experiences that engage the senses.

> *"I think people have a skewed perception of [the city] …they think it is still the industrial city that is was years ago, so I think implementing VR could change people's perceptions because there are some beautiful parts of [the city] and hopefully VR could make people realize that. If you could change people's*

perceptions before they got here and make them consider the city as a destination that would be a great thing" (P3).

"You cannot beat an actual experience of being here. People have got to come here and experience the city in real, feel it, see it" (P7).

6.3.2 Increased Visitor Numbers

As a marketing tool, VR could increase visitor numbers at the city destination by positively influencing visitors' behavioural intentions in the form of real visitation (P1-P7). This has also been confirmed in prior empirical research from the tourist's perspective (e.g. Tussyadiah et al., 2016; Disztinger et al., 2017; Huang et al., 2013). Hence, the second sub-theme refers to immersive technology's ability to increase visitor numbers in urban shopping destinations by positively influencing potential visitors' behaviour (e.g. real-visitation). When compared to AR, VR was considered most useful for urban place/destination marketers given their role in the pre-arrival phase in that they are able to encourage real-visitation and draw potential visitors to the destination.

"For [our organisation], I think VR has the most potential because our job is to get people here" (P4)

"VR is perfect for enticing people here, for destination marketing and pre-arrival...I think VR could really motivate them to visit" (P6).

The findings also indicated that VR could facilitate a more efficient and innovative booking procedure and ensuring this phase of the visitor's travel journey is as simple as possible is important as it will likely result in more confident purchase decisions (P3, P5).

"VR could enable a more efficient booking procedure as people might be more inclined to make appropriate and confident decisions on which city to visit" (P5).

"VR would create a more seamless experience. From a destination marketing view, it would make booking and planning the trip more seamless. I think VR would be useful in helping people decide on the city as a destination" (P3).

Because VR is considered a novel technology, it could encourage referral behaviour such as word of mouth (WOM) and social media recommendation; however, the perceived

barrier is people having access the VR device (P4). Moreover, it is important for visitors *"be in awe, surprised, and have a unique experience"* when at the urban shopping destination, and increase expenditure in several areas (e.g. attractions, restaurants), therefore, content should remain limited (P1, P2, P5). These findings emphasised the importance of integrating unique content that presents the city in a novel way.

> *"I think VR could encourage WOM because it will get people asking, have you seen that clip? But it relies on people having the tools to watch it" (P4).*

> *"If we are putting on something that other cities are doing, why would people choose our city? We would have to use technology to enhance our unique offerings to make it different" (P5).*

6.3.3 Attract Global Markets

Several participants (P2-P7) agreed that VR could be a useful marketing strategy to attract key markets, both domestic and international, which is vital given the increasing competition in the global market (Ichikawa et al., 2017; Griffin and Dimanche, 2017; Xu and Zhang, 2016; Walls and Wang, Griffin 2011; Baker and Cameron, 2008). According to P2, the overseas market can be difficult to reach and implementing AR and VR could be *"a low-cost way to get the awareness out there"* and could be a more efficient way to reach this particular market, which usually takes *"several years"* to reach.

> *"The overseas markets are not that easy to reach sometimes, and it takes a lot of time to reach them. Particularly with tour operators that bring large groups here as part of a group tour, it takes several years to actually get them here and to change their plans. So that type of VR experience would be really good" (P2).*

Indeed, P3 mentioned that the organisation is already considering implementing VR to promote the city to international visitors given that the use of innovative marketing methods will likely appeal to this particular target group. Similarly, prior research indicated that by using VR as a marketing tool, destinations have the unique chance to position themselves and attract potential tourists (Neuhofer et al., 2012; Chiou et al., 2008; Cheong, 1995). However, P7 argued that further evidence is required to demonstrate that

VR is effective in motivating potential visitors to travel to specific urban shopping destinations.

> *"We are looking at VR for our European campaign to try different ways to get people engaged…allowing them to preview the destination…VR has the potential to attract international visitors and make them aware of the city product" (P3).*

> *"Hopefully VR would motivate international tourists to visit, but it is yet to be seen" (P7).*

On the contrary, P1 provided evidence on the effectiveness of similar experiences such as 360-degree photos, which demonstrated that people enjoy being the first to gain insights into *"things that felt private, secret, or exclusive".*

> *"We did some 360-photos where people can view them through Google Cardboard to get a bit more of an immersive experience…to get people to come and visit the city or to show them things they could come and see…I think that is a way VR could be used in the future, because our research showed that people did want to experience things that felt private, secret, or exclusive, something that is not available right away" (P1).*

6.3.4 Added Value to the Visitor Experience

Another perceived benefit from urban place marketers' perspective is that AR and VR could provide added value to the visitor experience in terms of enhancing the on-site city experience, but also providing them with new ways to create memories. Providing a novel city experience could also encourage visitors so share their experiences on social media, which contributes to WOM marketing, therefore, providing additional benefits to the urban shopping destination through user-generated-content (UGC).

> *"It is all about adding value to the visitor experience, I think AR and VR would enable them to make the most of their time while they are in the city, so they don't miss things that might have been of interest to them. Also, if there is something visitors can take away with them, to create memories, and sharing them via social media, that is undoubtedly a great way to get our brand out there. It works both ways – it can work as a negative as well but generally it is really good" (P2).*

"I can see that AR would be useful there, such as a walking tour or an application…from the historic perspective, there would be loads to talk about there, but what you can see now is a very modern city landscape, so I could see AR working in that way" (P1).

More specifically, AR could be perceived as most useful for when visitors are at the urban shopping destination and post-arrival as it provides them with a fun way to interact with the city and could *"bring the destination to life".* While P3 stated that friends and family have used AR in the city and had enjoyed it, the real interest was in measuring the impact of the AR application.

"It would be interesting to assess the impact of the AR application that we have just tested. I think there is big potential for AR and it will bring the destination to life. I think just from friends and family that have been to the destination and used AR, they have really enjoyed it and shared their experiences on social media and it has been a fun thing for them to do so I think it has got potential…I think AR would be most useful for post-arrival/when they are here" (P3).

By enhancing the visitor experience, AR and VR could potentially change visitor satisfaction as it could provide them with a unique experience by allowing them to access a new experience that facilitates their access to new information about the place they are visiting. Therefore, content creation that ensures visitors are accessing new/novel information is vital in order for visitors to feel they have had a *"more complete or special experience"* as a result of using AR and/or VR technologies.

"I think AR more than VR could change visitor satisfaction because that focuses on enhancing the experience once they are here" (P5).

"I hope AR and VR could be something that would make the visitor feel they have had a unique experience, that they are getting something that not everyone is getting, that they know more than they knew before about the place" (P5).

"I think most important is the content and giving something more about a place that helps people feel like they have had a more complete or special experience so that visitors feel more fulfilled and satisfied by your destination" (P5).

6.4 Perceived Barriers

The perceived barriers of implementing immersive technologies were broadly explored and two sub-themes emerged including visitor readiness and technology access.

6.4.1 Visitor Readiness

The first sub-theme under the main theme of perceived barriers is visitor readiness. This study adapted definitions of consumer readiness in the e-business context (Chatzoglou and Chatzoudes, 2018), and defined visitor adoption of immersive technologies as the level of acceptance of immersive technology practices from final visitors. In this case, visitor readiness is measured by potential visitors' willingness and desire to use (Chatzoglou and Chatzoudes, 2018) AR and VR for the intended purposes (e.g. to view the shopping destination prior to visiting (VR) or to enhance the shopping experience on-site (AR)). This is because the findings indicated that a main barrier to implementation included visitors' general attitude and willingness to accept and utilise the immersive technologies, particularly VR applications, once they become available for visitor consumption (P2, P4, P6), as well as the general maintenance of hosting VR experiences.

> *"Another challenge is getting people to use the application...and the whole process of somebody using the VR headset, then it having to be cleaned etc…I think some people wouldn't be comfortable with that. I think some people are funny with headsets when going to Art Galleries, for example" (P2).*

This also indicated that ease of use is an important consideration for the development of VR, which is consistent with prior technology adoption research (Pantano and Corvello, 2014; Huang et al., 2013). Specifically, AR and VR applications should remain easy to use and understand and accessible for the wide variety of visitors that the city attracts (P6). Additionally, potential visitors might not be familiar with using VR HMDs and applications, which could act as a potential barrier to visitor adoption (P2).

> *"Another challenge is general awareness of VR…and it needs to be made as easy as possible for people to use and understand" (P6).*

> *"I think with VR it is the usability that people may not like" (P2).*

Indeed, P2 argued that VR could be useful for use at-home so that potential visitors can experience various urban destinations and shopping areas in a comfortable environment and at leisure, which could encourage them to make more informed decisions on places to visit.

> *"Using something like that would be useful if you are sitting at home and trying before you buy. I would see VR as a good way to promote a city destination for tourism, shopping or anything else…to use that in your home experience, that would maybe form a basis of making a final decision on where to take their next city break or holiday" (P2).*

The findings also indicated that VR will likely become more widespread once it becomes more accessible and affordable to the majority of the consumer market (P4). Similarly, P2 compared general acceptance of AR and VR with general acceptance of previous technologies (i.e. mobile phones) indicating that immersive technologies will become widespread over time.

> *"I think AR and VR will be the same as mobile phones – it will become widespread overtime once people accept it" (P2).*

6.4.2 Technology Access

Technology access was considered a potential barrier for AR and VR use and refers to how easily accessible the immersive technology is for the intended market. For instance, urban place marketers are challenged with regards to having a mechanism to deliver VR experiences (P2, P3) as to date, they are relying on visitors having the device ready to use at home, which is problematic given that VR devices are not largely mainstream (P7). However, although VR headsets are not widespread yet, is was suggested that they likely will be in the near future (P3).

> *"Maybe in a few years every household will have a VR headset so then it would be easier to reach them through VR and attract them to the destination" (P3).*

Additionally, given that these technologies are only recently receiving increasing interest by researchers and practitioners, the general awareness from potential visitors may be limited, which indicated that these devices need to be further promoted and when they do

become available, *"it needs to be quite clear on what the AR application is trying to do"* (P3). Hence, it is vital that the technologies intent is clear and in turn, this could motivate adoption from potential visitors. However, even when visitors become aware of these technologies, their device capability may not be able to facilitate an AR and/or VR application (P1, P2, P3) and visitors might not like or be used to VR usability (P2).

> *"Other challenges for implementation aside from cost are general awareness about AR and VR. It needs to be made as easy as possible for people to use and understand. I see that as a massive challenge...the barrier is awareness and getting people to use the AR [or VR] application once it is available" (P3).*

> *"I think with VR it is the usability that people may not like" (P2).*

Overall, participants expressed concern about potential visitors not having access to the required technology, specifically with regards to VR, given that specialist equipment is required (e.g. HMD) compared to AR where applications can be utilised on mobile phones, which many potential visitors already have access to. Nevertheless, the findings indicated that in the coming years, general awareness and access to AR and VR will likely increase. This means that investment in these technologies from urban place marketers could then be further justified and in time, VR could provide an alternative method to reach the intended markets (P7).

> *"We are relying on the visitor to have the quality equipment. Maybe in a few years every household will have a VR headset so then it would be easier to reach them through VR and attract them to the destination" (P7).*

6.5 Perceived Organisational Capability

The perceived organisational capability refers to whether the organisation (in this case, urban place marketing organisation including DMO or BID) has sufficient and wisely managed organisational resources such as development and user time, sufficient funding and sufficient technical skills (Chatzoglou and Chatzoudes, 2018; Hein and Rauschnabel, 2016). In short, this includes the *"enterprise's availability of financial and human resources"* (Chang, 2010, p.6), and Chatzoglou and Chatzoudes (2018) considered

elements such as firm size, firm scope, CEOs knowledge and the adoption cost. In this study, the three sub-themes of organisational capability included limited funding, return on investment (ROI) and organisational readiness.

6.5.1 Funding Access

Funding access was identified as a *"main challenge"* for all urban place marketing organisations as highlighted by all participants and is therefore the first sub-theme *(P1: "The main challenge is cost as the costs are quite high").* More specifically, the costs to develop and implement immersive technologies was identified as a main determinant of industry adoption, hence, further empirical evidence is required to encourage them to seek investment (P5). P5 also pointed out that technology is not at the forefront of funding applications and being the first to invest is not always best.

> *"When we are struggling with money, there are more important things to invest in than technology…we have learnt that being quick off the mark isn't always a good thing with technology because people can spend a lot of money investing in new technology and then very quickly that technology becomes obsolete or it doesn't work anymore…For me, it's about letting the tech-savvy organisations come up with the ideas, let people experiment with it and then invest" (P5).*

Investment from private and/or public funding bodies could be the only way that these organisations find funding and motivation to implement immersive technologies (P5), which is consistent with prior research (e.g. Jeon et al., 2006; Papazafeiropoulou and Pouloudi, 2000) indicating that an important determinant that motivates companies to adopt technology is the financial support and the motivations provided by the government.

> *"Hopefully we would find an investor or somebody that wants to do a project with us because that's the only way it would happen" (P5).*

According to the data, a main driver for private investment is consumer demand. Therefore, once immersive technologies are considered vital for attracting visitors and enhancing their customer journey, then investment will be sought, however, due to political and economic changes, there are fewer funding bodies for public organisations (P5).

"Customer demand would motivate funding for technology from private investors. If we thought it was key to improving the visitor experience, then we would try and find a funding source through the public sector but there are fewer public channels to find funding from" (P5).

6.5.2 Return on Investment

Evaluating the ROI was a main concern for all participants (P1-P7) and was therefore identified as another sub-theme under perceived organisational capability. ROI is a concept of performance in any form of investment and refers to how much economic benefit is derived from an investment in relation to its costs (Zamfir, Manea, and Ionescu, 2016). In this study, it was indicated that pressures to remain competitive (P2) and consumer demand for technological innovations (P5) could be the motivating factors that encourage investment.

"As a leading and developing city break destination, we have got to keep up with technology, so I think it is definitely worth looking into to see what the options are for example, how much would it be. In the present time, we would have to look at how we can develop something" (P2).

Further, the target market for immersive technology campaigns must be considered, taking into consideration the costs and the proportion of that market, a cost-benefits analysis would have to be carried out. Hence, the ROI on immersive technology campaigns must be evaluated prior to investment.

"It may be that [AR and VR] is directed at millennials, but with the cost implications for development and the service, would the end price be out of reach for that market…we have to take this into consideration" (P2).

"The costs are quite high, we have really got to evaluate the commercial return" (P1).

6.5.3 Organisational Readiness

Organisational readiness refers to the employee's readiness to embrace the technological innovation (Hein and Rauschnabel, 2016) and in this case, the employees were those at managerial level (e.g. Head of Visitor Economy, Commercial Director, Marketing

Manager) or within the digital marketing sector of the organisation (e.g. Digital Executive). The interview data indicated that several participants (P1, P3, P4, P5) considered the organisation as not fully prepared to implement immersive technologies in terms of allocating funding, employees' skills, ability and general knowledge on immersive technology development and implementation. This included how immersive technologies could be deployed to maximize commercial return and enhance visitor experiences (P4).

> *"VR could be something useful, but it depends on how easily available it is to produce, and the technical side of the content and to distribute it" (P4).*

Unlike travel agencies or retail stores/shopping malls, urban place marketers' lack facilities to host the VR experiences (P7). Therefore, a perceived barrier to implementation is where to host the VR experiences, which relates back to technology access in that VR is not yet widespread for at-home usage.

> *"I see potential for VR but the hurdles that we have come across is how do we use it. Because we have seen other travel organisations using it, but they put VR headsets into travel agents, so the potential tourist can preview the destination in-store. However, we are challenged by implementing something like that and which platforms to use because we are relying on our markets to have VR headsets. We are unsure of how to implement it and we need to do further research" (P7).*

6.6 Perceived External Pressures

The perceived external environment of an organisation includes existing and potential competitors, customers and buyers (Porter, 1979), hence, the pressures in the external environment consist of elements such as competitive pressures (Jia, Guo, and Barnes, 2017; Hein and Rauschnabel, 2016) and customer pressure (Maduku et al., 2016). In this study, the two sub-themes that emerged under perceived external pressures include competitive pressures and industry readiness.

6.6.1 Competitive Pressures

Pressures in the external environment including increasing competition from national and international urban shopping destinations was highlighted as a concern for several

participants (P1, P2, P5, P7). Hence, the first sub-theme is perceived competitive pressures, which has been identified as one of the most significant drivers for industry adoption of other technological innovations (e.g. Zhu et al., 2003). More specifically, competitive pressures refer to the fierce market competition, which forces firms to search for effective approaches to increase sustainable competitive advantage, such as reducing business costs, improving customer service and employing knowledge management (Jia et al., 2017). ICT innovation is viewed as an important channel to help firms achieve the above purposes (Jia et al., 2017), hence, it is imperative for urban place marketers to keep up with technological changes such as immersive technology implementation in order to remain competitive and attract newer generations (P2). However, the process is considered more complex than simply adopting the latest immersive technology; it is paramount to ensure the content is compatible to the city brand (P5).

> *"I think implementing AR and VR would give [the city] a competitive edge because we have always got to be thinking about the next generation of tourists…using the technologies would be really important to link our history with the newer generations and develop that hunger for people to come here" (P2).*

> *"If we invested it would have to fit with the [place brand] ethos as we are very protective of that brand, so technology has to play a key role in that…we pride ourselves as being a city of firsts, an innovative city with a strong industrial heritage, so anything we do we try and make it feel a bit edgy and different…it would have to fit with the brand" (P5).*

Moreover, it is vital for urban place marketers to implement immersive technologies strategically in order to ensure differentiation and competitive advantage (P6). This means implementing prior to competing destinations in order to stand out to visitors, which could be achieved through integration with existing channels such as social media and online (P6).

> *"Implementing [immersive technologies] into the destination offerings has the power to differentiate, however, it is difficult because if other destinations are using it, it's a case of how we get there first and stay ahead of the game. But I think it would be useful in terms of our online and social media" (P6).*

6.6.2 Industry Readiness

Drawing on prior definitions of organisational readiness (Hein and Rauschnabel, 2016), industry readiness refers to whether the tourism and retail industries overall are ready to implement and embrace these technological innovations (i.e. AR and VR). P3 mentioned that the organisation is considering incorporating VR into a recent campaign, therefore, demonstrating a keen interest in these technologies.

> *"We are looking at innovative ways to use applications and WeChat as well as VR for one of our campaigns, but I don't know how soon we will implement it" (P3).*

However, immersive technologies have only recently gained increasing attention from both industry and researchers, hence, the interviews shed light on several barriers that need to be overcome in order to encourage mainstream adoption (P2, P3, P5). For example, visitors' expectations of immersive technology experiences in the tourism sphere are yet to be realised (P2, P3, P5).

> *"I don't think VR is a deal-breaker at this point. I don't think visitor expectations are there yet…but it will be in the future" (P5).*

Indeed, once the barriers are overcome, it is expected that immersive technologies will reach mainstream adoption (P7). Therefore, the findings indicated that perhaps the tourism and retail industries are not yet ready for AR and VR, however, as the technology continues to rapidly progress, the technologies will become more widespread and its usefulness realised in the near future.

> *"I think AR as a marketing tool is great. VR faces more barriers, but it will be useful in the future…whether that is in two years or four years, the time will definitely come" (P7).*

> "*My overall view on AR and VR is positive…it is probably going to become the norm sooner or later but there is a lot of work that needs to be done" (P2).*

6.7 Summary

This chapter presented the four themes and eleven sub-themes that emerged from the interviews with urban place marketers. Overall, three new sub-themes emerged including one *perceived barrier* (technology access), one *perceived organisational capability* factor (organisational readiness) and one *perceived external pressure* (industry readiness). The interviews were useful in identifying urban place marketers' perceptions and adoption intentions of implementing immersive technologies into the strategic marketing plan for visitor consumption. Given their role in attracting potential visitors to the urban shopping destination, several participants perceived VR to be most attractive to them. Others pointed out that enhancing the on-site destination experience is pivotal to their role as an urban place marketer, therefore, AR could also be useful for them. Prior research has indicated that it is important to understand how VR could be integrated into trip planning to positively influence the decision-making process and influence potential visitors' behavioural intentions (e.g. Tussyadiah et al., 2016; Disztinger et al., 2017; Fauzi and Goazli, 2015; Huang et al., 2013). Similar findings were indicated in this part of the study; however, the findings offer an alternative, industry perspective on this topic in the urban place marketing context. Specifically, the interview data indicated that VR could potentially increase the visitor number at an urban shopping destination by facilitating a more seamless booking procedure during the pre-visit phase and enable potential visitors to make more informed purchasing decisions. In turn, this could positively motivate people to visit the urban shopping destination and encourage referral behaviour by WOM and social media recommendation *(increased visitor numbers)*. This is important given that social media was confirmed as an important tool for urban place marketers in the interviews, and prior research (Hays et al., 2013) has indicated that social media is widely used by online travellers and is vital for place/destination marketers to reach global audiences with limited resources.

Given that the interview data indicated that VR could challenge potential visitors' perceptions in terms of *enhancing destination image*, VR could therefore be appealing to urban place marketers when developing their strategic approach to marketing. Indeed, a differentiated destination image has become a basis for survival nowadays given the globally competitive marketplace where destinations are competing intensely (Qu et al.,

2011). However, creating a compelling and distinctive image in the competitive tourism marketplace has always been a challenge (O'Rawe and Gibson, 2017). Additionally, the organisational readiness, in terms of employees' skills and knowledge including at managerial level, allocated funding and general knowledge on how best to implement immersive technologies, could act as a barrier to implementation, which indicated that further training is required.

The emergent sub-theme of *industry readiness* indicated that the industry overall might not be entirely prepared to implement and adopt immersive technologies, however, when the time is right then pressures in the external environment will increase. Specifically, as these technologies are only recently receiving increasing attention from researchers and practitioners, urban place marketers could be slow to adopt given their funding and organisational capabilities. Therefore, the industry adoption of these technologies from both urban place marketing organisations and potential visitors in the future could determine when urban place marketers decide to adopt these innovative technologies. By synthesising the interview findings with prior literature, it was concluded that VR could potentially play an important role in the future marketing of urban shopping destinations. Based on these findings, the visitor interviews focused primarily on VR rather than both AR and VR.

Chapter 7 – Visitor Interview Data Analysis

7.1 Introduction

The following chapter presents the qualitative analysis of the interviews conducted with visitors to urban shopping destinations. The chapter begins with an introduction to the visitor interview analysis and highlights the new and existing themes and sub-themes. The discussion of the findings begins in section 7.2.1. From the qualitative findings, ten hypotheses were developed, which are outlined at the end of each subsection throughout this chapter. The hypotheses informed the development of the qualitative VR Visitor Behaviour S-O-R Model and the data provided a foundation for developing the survey. The hypotheses were tested in the second, quantitative research phase in order to validate the proposed model.

7.2 Visitor Interview Analysis

In accordance to the S-O-R paradigm, the interviews aimed to draw on participants' internal response (O) to the two VR retail applications in order to determine the influence of VR retail environment cues (S) on visitors' behavioural intentions (R) in the context of urban shopping destinations and to draw out emergent themes specific to VR. Overall, three main themes and thirteen sub-themes were identified from the visitor interview analysis. The four emergent sub-themes under the main theme VR retail environment were virtual atmospherics, virtual aesthetics, social presence and layout design. The remaining themes (interactivity and usability) under this main theme were previously identified in other VR research as well as in this study. Additionally, presence, emotional arousal and attitude were not considered emergent sub-themes and similarly, internal response and behavioural intentions were not considered emergent themes because they had already been identified in the VR literature in a similar context as this study.

At the end of each section, hypotheses have been made for the development of the VR Visitor Behaviour S-O-R Model and derive logically from the qualitative findings and are supported by prior research. As discussed in Chapter 2, the S-O-R theory has formed the basis of many studies in traditional retailing, e-commerce, m-commerce and more

recently v-commerce research and has also been adapted to the tourism context. Therefore, this study employed the framework to examine the relationships between the VR retail environment and visitors' behavioural intentions. Employing an exploratory-confirmatory design, the purpose of the initial qualitative phase was to produce specific relationships between emergent and existing themes to inform the hypotheses, which then directed the data collection used in the second, quantitative phase (Creswell and Clark, 2006). Using qualitative data to generate hypotheses, which are then tested using quantitative research has also been outlined in Bryman's (1989) scheme of rationales for combining quantitative and qualitative research. Therefore, hypotheses were developed based on the interview data and prior research in order to indicate the tentative statement of the relationship between an independent variable and a dependent variable (Creswell, 1994).

The relationship between the emergent sub-themes and internal states (e.g. virtual aesthetics and emotional arousal) were similar to those previously identified in the reviewed literature. However, in this study the relationships were specific to VR retail in an urban shopping destination context, therefore, those constructs were adapted to the VR context (e.g. web aesthetics > virtual aesthetics). The hypotheses aimed to test the theories in a new context (VR and urban shopping destinations), which is a logical extension of prior research. The hypotheses for these sub-themes were developed to follow the prior theory and validate the proposed relationships between the constructs.

Similar to Eroglu et al's (2001) S-O-R model, which formed the basis of the majority of retail store environment research and e-commerce studies using the framework, the sub-themes of internal states included an affective state (emotional arousal) and a cognitive state (attitude) and also presence, which could be considered more prominent in the VR context. This study employed the definition of presence as transportation, which dominates the presence literature (Schuemie et al., 2001) and consists of two dimensions: arrival and departure (Kim and Biocca, 1997). Arrival is the feeling of being present in the virtual environment while departure is the feeling of separation from the physical environment (Kim and Biocca, 1997), thus presence was included in the model as an organism component and this is further justified in the presence subsection (see

7.2.2.1). Drawing on the reviewed literature, the internal states were classified accordingly as they draw similarities with variables identified in prior research. Likewise, the sub-themes of behavioural intentions have been identified and examined in prior VR research and were classified accordingly.

7.2.1 VR Retail Environment (Stimulus)

The VR retail environment refers to the virtual world experienced by the user in the VR headset in a specific retail context (e.g. shopping destinations, shopping centres and retail stores) and consists of atmospheric elements (e.g. visuals and sound), design factors and social aspects, similar to traditional retailing and e-commerce theories. The interview data analysis revealed six sub-themes under the main theme VR retail environment including virtual atmospherics, virtual aesthetics, social presence, interactivity, layout design and usability. The sub-themes are defined in more detail at the start of each section.

7.2.1.1 Virtual Atmospherics

In this study, the virtual atmospherics (i.e. sound and visual combined) increased the sense of presence and is the first sub-theme of the virtual retail environment. Drawing on prior definitions in traditional retailing (Kotler, 1973-1974) and e-commerce (Dailey, 2004, Wu et al., 2013) research, virtual atmospherics refers to all cues that are visual (e.g. colour, graphics, texts etc.) and audible (e.g. audio/music) to the user and are designed to create positive effects (e.g. positive mood, increased purchases etc.) in users in order to increase favourable response.

In Application A, the commentary providing information on the destination together with the visual representations of the destination generated a deeper sense of presence (VP1-VP8, VP10-VP12). Additionally, the majority of participants (VP1-VP6, VP7, VP8, VP10-VP12) preferred the commentary in Application A over the music in Application B because it was more useful and informative about a destination they have never visited.

> *"The [360-degree] experience was actually like being there, and you were taken in by the sounds as well as what you saw" (VP4).*

> *"I preferred the commentary. It was a guide to what's going on, where I am going without having to think about it. It gave more information" (VP6).*

The interviews also indicated that providing participants with informative facts through sound could provoke interest in the destination, which is evident as the commentary provided participants with a realistic insight into the destination prior to visiting and is particularly important when visiting new destinations.

> *"I did listen to it, so to know where I was and facts behind it as well. Especially with the Mosque it said something about how it used to be a school and then it turned into a mosque and I was like "whoa" so being quite factual" (VP10).*

> *"I did like the commentary, only because I have not been to the destination. I feel that if I had been to the destination then it would be a bit more like I wouldn't need to hear it. But I feel that for a person visiting a new destination then it would be very helpful. I did feel like I was on an actual virtual tour of the place. It really did give me a feel for the destination" (VP2).*

Several other participants (VP2, VP3, VP5, VP7, VP12) enjoyed the natural sounds such as the fireworks, which is consistent with prior studies (Jung et al., 2017; Tussyadiah et al., 2016; Gutierrez et al., 2008; Larsson et al., 2010) suggesting that more vivid sounds increase presence. VP3 would prefer an ambient crowd as one would expect when shopping in the real world. A consensus was that additional sound effects (e.g. other shoppers) consistent with the visual cues could make the experience feel more realistic and therefore enhance the feeling of presence.

> *"I could hear a lot more on the first one than the second one. The second one seemed a bit limited. Because I just went into one place" (VP1).*

> *"If there was a nice ambient crowd in the background that you would find in the shopping mall…that would make the experience a lot more realistic" (VP3).*

> *"I did hear the sound effects and the fireworks a little bit, but I found that when it was showing a lot of water, I couldn't hear many sound effects I could just hear the commentary. I would have preferred more sound effects to make it a bit more real…. louder and clearer sounds would make me feel like I was there more than I did" (VP5).*

VP2, VP5 and VP6 enjoyed the *"traditional music"* (VP6), as it was consistent with the visual cues and perceived as *"relevant to the culture"* (VP2), which made them feel virtually present in the destination being viewed. VP11 suggested that music in certain scenes such as the beach would be more suitable to remain consistent with what one would prefer when visiting the beach in the physical world.

> *"The sounds were very relevant to the culture with it being in Dubai. The sounds were good. It didn't seem to be off putting. I did enjoy them, it added to the whole experience in the environment" (VP2).*
>
> *"I kind of like the traditional music, it gave me a feeling like I was in that environment, in that country" (VP6).*
>
> *"It's quite nice when you are on the beaches and stuff to have music because you are on the beach. But when you're in the markets and the malls and stuff it's nice to have someone explaining where you are and what's there" (VP11)*.

VP4 and VP3 stated that additional senses including touch, scent and vibrations would make the experience more realistic and enhanced and increase the sense of presence, thus, demonstrating the need for more multisensory VR developments in the urban place marketing sphere.

> *"If someone in VR pushes flowers up to your face and at the same time the smell of flowers is released that would make it more real. Or if you could smell the sea air when the sea comes on, or feel cold when looking at the Arctic, or heat on your face when you see Dubai, then I would feel more present" (VP4).*

Overall, prior research has indicated that stimulating multiple senses (e.g. visuals and sound together) through the virtual atmospherics (e.g. imagery and music) positively influences presence (Jung et al., 2017; Martins et al., 2017; Gutierrez et al., 2008). However, studies evaluating virtual atmospherics are limited, therefore, this construct was considered a new sub-theme emerging from the interview data and the following hypothesis was proposed:

> ***H1:*** *Virtual atmospherics will positively influence presence.*

7.2.1.2 Virtual Aesthetics

The second emergent sub-theme is virtual aesthetics. Similar to web aesthetics, the virtual aesthetics refers to the visual design factors (Deng and Poole, 2010; Chang et al., 2014) although this study applies this specific to the visual design of the VR environment.

The findings demonstrated that the virtual aesthetics largely affected the extent to which participants felt present in the VR retail environments. More specifically, the sense of presence increased when viewing realistic/vivid visual cues, which is evident as all participants preferred Application A (VP1-VP12) mainly because the usage of real video footage provided participants with a more realistic insight into the destination and made them feel like they were present in the virtual world.

> *"I felt like the first one (Application A) was a bit more realistic. I enjoyed seeing the fountain because it felt really real. Whereas the other one (Application B) was kind of like you are looking on Google Maps" (VP7).*

> *"I think that maybe the real footage is more realistic because you feel like you are there" (VP10).*

Several participants (VP2, VP3, VP5, VP9, VP10, VP11, VP12) pointed out that Application B was a computer simulated environment, however, the aesthetic quality and realism of the 3D environment meant those participants still enjoyed the VR experience. On the contrary, VP5 and VP2 identified features of the virtual environment in Application B that impaired the extent to which they were able to fully immerse themselves in the virtual world. Therefore, those participants felt that the 360-degree video in Application A was more immersive because it provided real-world imagery, which supported that the use of real images, rather than 3D renders, would be more effective in heightening presence (Guttentag, 2010).

> *"With the graphics of the simulation…you wouldn't necessarily be able to tell [that it is computerised]" (VP10).*

> *"It felt real, but then I looked up at the lights and I could tell the lights weren't real, and also the thermostats (VP5).*

To improve the aesthetic appeal, suggestions for additional visual content include drone footage, nature shots and additional areas of the destination as opposed to only the main tourist attractions in order to provide potential visitors with insights into the wider offerings and facilities and amenities (VP1, VP9, VP10, VP11, VP12). VP1 also suggested inclusion of local shopping and residential areas.

> "*A bit more of the city, more of the backstreets, the areas where people live, what is going on in the bigger picture and the shopping experience such as traditional and local markets…more transport links" (VP1)*.

Overall, the findings demonstrated that virtual aesthetics, specifically those perceived as being more vivid, will have a positive effect on presence. Aesthetics has been the focus of attention in many e-commerce studies (e.g. Liu et al., 2016; Chang et al., 2014; Loureiro and Roschk, 2014; Rose et al., 2012; Wang et al., 2011; Harris and Goode, 2010; Wang et al., 2010) and m-commerce research (e.g. Lee, 2018; Huang, 2017; Wang and Li, 2017; Sahoo and Pillai, 2017; Cyr et al., 2006). Prior VR tourism research (e.g. Tussyadiah et al., 2016) has indicated the importance of incorporating aesthetically pleasing imagery to increase presence and induce interest in experiencing tourism destinations. However, few studies have evaluated virtual aesthetics or examined the relationship between virtual aesthetics and presence, specifically in the context or urban shopping destinations. Therefore, virtual aesthetics was considered an emergent sub-theme for this study context, and the following hypothesis was proposed:

> ***H2:*** *Virtual aesthetics will positively influence presence.*

7.2.1.3 Interactivity

All participants (VP1-VP12) demonstrated the desire to interact with virtual representations as this would allow them to better investigate a product and its features (Verhagen et al., 2016; Jiang and Benbasat, 2005; Coyle and Thorson, 2002), hence, interactivity was identified as another sub-theme. More specifically, this study draws on prior definitions (Steuer, 1992; Li et al., 2001; Fiore et al., 2005) to produce a definition of interactivity as the extent to which VR users might participate in adjusting (e.g. modifying virtual products such as changing colour) the virtual content in real time. According to the findings, increased interactivity, which allows participants to become highly involved with

the virtual retail environment, would enhance the overall experience. More specifically, handling the virtual products, including the ability to zoom in and inspect the products (VP3, VP4, VP5), would make the experience more realistic.

> *"Being able to go close-up to and inspect the goods, if you could pick up products, have a look at them, and become part of the whole experience. The more you could become a part of it, speaking to people and asking questions, handling the merchandise, the better it would be" (VP1).*

However, VP12 stated that interacting with the virtual environment could create more of a barrier for consumer adoption due to costs of purchasing haptic devices and other expensive equipment. When comparing VR to online shopping through computer or mobile, VP12 highlighted that those technological devices have other uses, are more widespread than VR, and are already more accessible for the consumer market. Therefore, VP12 indicated that at the moment, it is important to identify additional uses for VR in order to justify the investment in this technology.

> *"If you are going down that route like picking stuff up, you would have to get them interactive gloves…then if you are looking at putting this stuff into the household then you are going into expensive stuff…to get the full kit just to view something in VR that you can view online for free. Well, it's not for free because you would have to buy the laptop, but the laptop has other uses doesn't it" (VP12).*

The findings demonstrated that increased interactivity has a positive effect on presence. Although few studies have explored interactivity in the context of VR and urban shopping destinations, this study does not claim interactivity as a new theme given that it is well-established as a key determinant of presence in VR literature (van Kerrebroeck et al., 2017a; Tussyadiah et al., 2016; Coyle and Thorson, 2001; Cheng et al., 2014; Rheingold, 1991; Steuer, 1992). The following hypothesis was proposed based on the findings of this study and is consistent with prior research:

> ***H3:*** *Interactivity will positively influence presence.*

7.2.1.4 Social Presence

Adapting from prior definitions (Ogonowski et al., 2014; Gefen and Straub, 2004; Short et al., 1976), social presence can be defined as the individual's perception of personal, sociable, sensitive human elements of VR.

In the VR experiences used for this study, social presence was portrayed in the variety of other people in Application A while Application B did not provide an element of social presence. All participants confirmed that having others (e.g. virtual avatars and/or other virtual shoppers or friends and family using VR at the same time) present in VR and being able to interact with them would make the experience more social and enjoyable and create more of an atmosphere, which demonstrated the importance of social presence in VR rather than experiencing the virtual retail environment alone. This could be in the form of a virtual avatar with another VR user or a virtual assistant. However, ensuring the virtual avatars are consistent with the culture of the destination being viewed was considered important to create more of an authentic destination experience.

> *"It is always nice to have an atmosphere, rather than having no one around whatsoever… I think some sort of virtual avatar would be a lot better…a digital assistant behind the counter and then a few people browsing…it would just make it feel like a more worldly experience" (VP2).*

Application A featured a scene with local people on a boat, which made participants feel as though they were in the boat and being *"looked at"* (VP1, VP4, VP7, VP8, VP9-VP12) and encouraged participants to want to communicate with the local people at the destination. Similarly, participants (VP2, VP6, VP9) enjoyed the scenes with a social atmosphere such as at the bar on the beach as this is what one would expect when visiting a destination and participants noticed the lack of social atmosphere in the mall.

> *"[In the 360-degree video] it actually felt like people were looking at me and I could interact with people in the video…that would be a good element to it" (VP6).*

> *"I was like going to fully engage with these people even though I knew that I couldn't…that would be pretty cool" (VP9).*

Similar to prior research, the findings indicated that feeling connected to others through interaction and communication would contribute to a more realistic experience (Tussyadiah et al., 2016; van Kerrebroeck et al., 2017a; Coyle and Thorson, 2001), and increase positive feelings such as relaxation. For instance, communicating with virtual store assistants while purchasing goods at the check-out counter would create more of a realistic shopping experience. Additionally, potential visitors could become more informed on the place by communicating with local people who live and work in the urban shopping destination being viewed in VR.

> *"On the first one [the 360-degree video], you felt like you were there with that one. Like you were part of it, that you could talk to people, and like they were looking at you" (VP1).*
>
> *"I think it would be more of a real sort of feel. Maybe make me feel a lot more relaxed and not like I was in an isolated environment" (VP2)*.
>
> *"I think you could get a lot of information from [interacting with people who] live and work there" (VP1)*.
>
> *"Especially in The Body Shop maybe having a shop assistant coming up to you or something like that. It would be more like the real-world atmosphere" (VP6).*

Moreover, interacting with familiar people such as friends and family would enhance the experience (VP2, VP5, VP11, and VP12). In line with this, VP11 and VP12 discussed the importance of sharing the VR experience with the people they are traveling with. Therefore, those two participants (VP11 and VP12) suggested that being able to communicate with one another in the same VR retail environment would be useful because they could comment and discuss points of interest in VR.

> *"It would be good though, if I could speak to someone else in virtual reality, like my mates" (VP5).*
>
> *"If you are going with somebody the dual experience would be better for the pair of you because you would be doing it together wouldn't you" (VP12).*

In the VR literature, prior studies have indicated that the social element or social presence is important yet limited in many VR experiences (e.g. Tussyadiah et al., 2016; Jung et al., 2016). Hence, there are limited studies investigating social presence in a specific VR retail marketing context, therefore, social presence was identified as a new sub-theme in this study. More specifically, the interview findings indicated that social presence would increase the sense of presence within the VR retail environment, therefore, the following hypothesis was proposed:

H4: *Social presence will positively influence presence.*

7.2.1.5 Layout Design

Drawing on prior definitions (Manganari et al., 2011; Pearson et al., 2007; Mummaleni et al., 2005), this study defined layout design as the structure and arrangement of the information and content (e.g. layout of the virtual store/virtual destination) provided by VR that directs the user's virtual navigation.

The layout design of the interactive store environment was perceived to be realistic when compared with traditional retail settings and was important to allow participants to navigate and easily move around the VR retail environment. Navigating the virtual environment was perceived as *"pretty straightforward"* (VP6) and the majority of participants (VP2-VP12) could easily navigate. Perceived ease of navigation through effective layout design is particularly important to reduce feelings of stress and/or irritation.

> *"I felt comfortable and I could get around the surroundings quite easily…everything was to scale and proportionate" (VP3).*
>
> *"I suppose the mechanics of it was pretty straightforward. I felt like it was user-friendly. You can just look at the arrows and see where to go. I found that experience quite easy to use" (VP6).*

Being able to easily navigate around the store made the experience feel more realistic, which enhanced enjoyment and presence (VP2). Because VP1 and VP7 encountered difficulty with navigating through the interactive store, they preferred Application A because they could detach from reality and did not have to focus to much on the task at

hand. VP1 suggested that a more natural mode of transportation that better replicated walking, rather than teleportation, would improve the overall experience.

> *"I like the way you could navigate around the shop and it was not just stationary. I could look around and it did really feel like I was there" (VP2).*
>
> *"I found that one hard to go in and out of. The first one was easier because I could look around more and focus. [It was] quite challenging…and very difficult to focus on the arrows [for teleportation] … [Application A] was easier because I could look around and focus more" (VP1).*
>
> *"I just think it would be easier if I could walk into it, rather than rush into it, and I could take my time looking around. It would make the experience feel more natural"*.

Moreover, VP5 mentioned that the VR retail environment *"could have been more signposted"* (VP5), which was echoed by VP2 and VP3. To improve navigating through both VR retail environments, VP3 suggested barriers, signs and footprints lit up on the floor to guide the user through the virtual environment. Although VP3 enjoyed the use of focusing on the arrows to move from the shopping mall into the store on Application B, VP3 suggested that illuminating in a more prominent colour or the use of special effects could improve this feature.

> *"If I was talking about navigating around the shops, so in certain cities you will have like footprints marked on the floor or you could have a suggested barrier…if you could have a barrier around certain bits to navigate you around the shop in a certain manner. That is all I could suggest really. Apart from the obvious, which is signs" (VP3).*

Overall, the findings suggested that the layout design would have an effect on presence. More specifically, a seamless and easy to navigate layout design would enable participants to become more fully immersed in the VR retail environment as they would not be distracted by this function. Accordingly, this would increase the sense of presence. Few studies have investigated layout design and its relationship with presence in the

context of this study. Therefore, layout design was considered an emergent sub-theme from the interview data and the following hypothesis was proposed:

> ***H5:*** *Layout design will positively influence presence.*

7.2.1.6 Usability

In this study, usability refers to whether the user can successfully and effectively use the device and consists of ease of use but equally involves efficacy, which is effective in terms of measures of (human) performance (Shackel, 1991). More specifically, drawing on an early definition (Shackel, 1991, p.24), usability can be defined as *"the capability [of the device] to be used by humans easily and effectively".*

The findings suggested that the usability had an effect on presence as participants were distracted with the functions (e.g. focusing in), which detracted them from feeling fully detaching from the real-world.

> *"I was messing about with the focus too much, but I was there in mind, not body" (VP12).*

VP3 suggested that a multisensory experience could be achieved through vibrations and higher quality sound when navigating. Similarly, VP11 suggested that headphones could be useful to heighten the feeling of presence as it would eliminate noise from the real-world. However, according to VP12, this would be dependent on the user's characteristics and preferences.

> *"Additional features with moving around, so you could have like on PlayStation remotes, vibrations to go with sounds…so if a car goes past, it actually vibrates your temples and your senses more, and you could have more high-quality speakers" (VP3)*.

> *"I wonder if like proper earphones, but then I wonder it that takes it away because you don't naturally walk around with earphones on your head" (VP11)*.

For some participants (VP2, VP3, and VP6), VR was easy to use, *"very user-friendly"* (VP6)*, "pretty straightforward"* (VP2), and, *"I felt completely at ease with the device"* (VP3). On the contrary, several participants (VP1, VP4, VP5, VP7-VP12) highlighted

issues with the usability including focusing in using the function on the HMD (VP1, VP4, VP7, VP9-VP12) and the speed of Application A.

> *"[The graphics] might be sharp for other people but with my eyesight it wasn't" (VP4).*

> *"If it could automatically focus rather than you just doing it that would be a good help" VP7).*

By comparing the experiences to previous VR experiences using the same HMD, VP10 suggested that the lower quality of the graphics could be because of the quality of the YouTube video used for this study. Therefore, several recommendations to improve VR retail applications were offered including the sharpness of the graphics and an improvement with the focus adjustment function (VP1, VP4, VP9-VP12), as well as a comfortable and lightweight HMD (VP5), adjustable straps (VP5), the application housed inside the HMD (rather than inserting a smartphone) (VP4) and HD video (VP12). With regards to the content, VP9 suggested a variety of urban destination experiences and VP3 provided several additional technological improvements (e.g. USB port to connect to a VR projector, Bluetooth, ISO capabilities, 4K capabilities etc.).

> *"[The graphics] would be one point [to improve]. But I don't know if that was the video because previously when using [Samsung GearVR] it was absolutely top notch from what I can remember" (VP10)*.

Overall, the findings demonstrated that ease of usability of VR retail applications and VR hardware will have a positive effect on presence as it would prevent the user from focusing too much on how to use the device and application and allow them to become immersed in the VR retail experience. In the immersive technology literature, studies tend to focus on ease of use (e.g. Disztinger et al., 2017; Huang et al., 2016; Rese et al., 2016; Huang et al., 2013; Fagan et al., 2012) rather than focusing on usability, which involves efficacy. Accordingly, there are limited studies exploring usability in the context of VR for retail and urban marketing. In this study, usability refers to effectively using the VR device and the VR retail application, thus usability is not considered an emergent sub-theme.

Given that the visitor interviews indicated that VR usability will influence presence, the following hypothesis was proposed:

> ***H6:*** *Usability will positively influence presence.*

7.2.2 Internal States (Organisms)

Similar to prior research (Eroglu et al., 2001) internal states can be categorised as affective or cognitive. In this study, the internal states sub-themes that emerged are emotional arousal (affective state) and attitude (cognitive state). Additionally, presence was considered an organism component. The sub-themes are discussed in further detail below.

7.2.2.1 Presence

In this study, presence was considered an organism component with the S-O-R paradigm given that it refers to the individuals' subjective experience and feeling as though they are present in the VR environment.

Similar to Marchiori et al.,'s study (2018, p. 144), the majority of participants had experienced VR for the first time in this study and repeatedly referred to the feeling of *"being there",* rather than reporting what was displayed. This could be explained by the novelty of trying VR for the first time (Marchiori et al., 2018) and comparing it to previous technologies that participants have used when searching for destinations to visit.

> *"[What I enjoyed is] seeing it as if you were there" (VP10).*

> *"I think [VR] is far beyond the experiences I have had when researching into destinations…it is a new thing" (VP6).*

A deeper sense of presence was achieved when viewing vivid representations of the destination in Application A compared with Application B. Of the two VR retail applications, participants preferred the one which made them feel more present, which indicated positive reactions to technologies that immerse users on a deeper level.

> *"I did feel more present in the first one, with the virtual tour…it felt like more of a real environment, rather than it being digital… I definitely felt like I was there. 100%,*

I felt immersed into the environment…I was very comfortable with it, I enjoyed it" (VP2).

Despite experiencing VR immersion for the first time, the majority of participants (VP2-VP12) felt at ease with the level of VR immersion once they had time to relax into the experience. However, because Application B was a computer simulated environment, VP7 referred to it being no different than viewing an interactive video on a computer screen. The limited ability to communicate with other users limited the extent of feeling present (Tussyadiah et al., 2016), which indicated that having other shoppers present in the virtual environment would create more of a realistic atmosphere in VR. Application A featured real people, therefore, participants felt more present. Overall, the more comparable the VR environment is to the real world, the more present participants felt.

"[I felt] very immersed [in the 360-degree video]. I felt comfortable with it. I have never experienced it before. It is fantastic. Loved it" (VP1).

"With the first one I definitely felt like I was there. It was so real. It felt like people were looking at you and kind of like acknowledging your presence" (VP7).

"I think I would have felt more present in the environment if there was a bit more interaction and a bit more going on around me. But apart from that, I did feel like I was in the store" (VP2).

7.2.2.2 Emotional Arousal

The first sub-theme of internal states is the affective state, namely, emotional arousal. This study adapted the definition of emotional arousal from the online shopping context (Koo and Ju, 2010) and referred to emotional arousal as the extent to which an individual engaging in VR retail applications feels stimulated, active or excited when experiencing VR. Arousal refers to the extent to which a person feels excited or simulated, and can be explained using terms such as relaxed, calm and excited (Yüksel, 2007; Blackwell et al., 2006; Baker et al., 1992) and negative arousal can include feelings such as fear or anxiousness.

In this study, participants expressed feelings of excitement from using the VR retail application to view the urban shopping destination in a new and novel way. VR was

perceived to be similar but more *"fun"* than previous methods (e.g. the internet) used to search for shopping destinations.

> *"It was exciting and new for me" (VP1).*
>
> *"It is similar in ways [to the internet], it is more fun" (VP5).*

The more immersed participants felt, the more they expressed positive emotions, which indicated VR's ability in generating an emotional connection between the destination and future visitors (Griffin et al., 2017; Tussyadiah et al., 2016; Huang et al., 2013). Being able to communicate with others in VR would enable participants to feel more relaxed when using VR retail applications, rather than feeling as though they are alone in the virtual world and when using VR at home, VP2 suggested that tailoring the sounds to the user's personal playlist would enhance the feeling of relaxation. The majority of participants were at ease with the level of immersion and did not experience negative emotional responses (VP1-VP5, VP7-VP12).

> *"If you were to be shopping in your own home then it would be good to have a choice of your own music that you want to listen to from your own playlist playing in the background to make you feel more at home and more relaxed" (VP2).*
>
> *"I felt immersed. I felt very comfortable with the feeling [of immersion]. It sort of felt like you were taking part in the experience" (VP4).*

On the contrary, VP6 experienced feeling nauseous from the level of immersion, which could imply negative emotions such as fear or distress. This was particularly prominent when at virtual heights, which provided evidence on the relationship between presence and negative emotional responses. Additionally, VP11 and VP12 suggested that having too many people present in VR could create feelings of anxiousness in people with social phobias. However, studies have demonstrated that VR could be useful for exposure therapy and overcoming acrophobia (i.e. fear of heights) and social phobia (Emmelkamp et al., 2001, 2002; Rothbaum et al., 1995). In line with this, VP11 indicated that having an insight into the busyness of the shopping areas could be useful to avoid crowding and is particularly relevant for people who experience anxiety due to crowding (van Kerrebroeck et al., 2017a). VP11 and VP12 also mentioned that involuntarily being interacted with

could create stressful situations, which indicated that providing the user with the ability to control interactions in VR could be a crucial element of interactivity and social presence in order to lessen negative virtual encounters.

> *"I enjoyed the bird's-eye view of things, looking down…for me, I am scared of heights and I think this could work in curing that. Can I try another city?" (VP1).*

> *"It was so immersive that it made me feel nauseous…I think the whole experience was good in a general sense. I think at first, I was comfortable with it, until certain points where you are either high up. I think at one point you are at the top of the Burj Khalifa looking down and that was quite a nauseous feeling" (VP6).*

> *"I think it would stress me out a bit if someone was talking at me and I didn't know what they were saying" (VP11).*

> *"No, I cannot be bothered making a conversation with somebody in VR" (VP12).*

Overall, the findings suggested that emotional arousal, whether positive or negative, is determined by the sense of presence experienced as a result of the VR retail environment cues. Accordingly, the following hypothesis was proposed:

> ***H7:*** *Presence will positively influence emotional arousal.*

7.2.2.3 Attitude

The third sub-theme is attitude, which is a cognitive state that Blackwell et al., (2006) defined as overall evaluative judgements built on beliefs and feelings.

In this study, attitude is specifically associated with participants attitude toward using VR retail applications and attitude towards the urban shopping destination viewed in VR. The findings indicated that providing insights into the traditional and cultural areas in VR, rather than focusing specifically on the main tourist attractions, could lead to attitude change. For instance, VP9 and VP10 mentioned that Dubai is marketed as modern and cosmopolitan yet viewed as having little traditional character. However, after viewing Dubai in immersive VR, those perceptions changed as VR exposed the culture which made the destination more attractive and appealing.

"When you think of Dubai I expected it to be simplistic almost and not very much character because it is like really well-built and modern. But then seeing the local markets and things you see obviously a different side of it that I wouldn't have envisioned before" (VP10).

Displaying richer information and aesthetically pleasing content on a more immersive scale when compared with other marketing methods (e.g. the internet and brochures) provided potential visitors with a broader view of the urban shopping destinations offerings. In turn, this generated positive attitudes towards using VR to shop and the urban shopping destination being viewed, and also demonstrated how VR could be used to shape the perceived place/destination image by assisting potential visitors with developing realistic expectations of the tourism experience with the place/destination (Hyun and O'Keefe, 2012; Nicoletta and Servidio, 2012; Govers, Go, and Kumar, 2007; Thomas and Carey, 2005; Tooke and Baker, 1996; Cheong, 1995; Guttentag, 2010; Williams and Hobson, 1995).

"[Dubai] is different to what I thought. I felt like I seen more of it compared to when you look on the internet or in a brochure. I felt like I was there and had more of an open view of it" (VP1).

"I found it quite useful because I didn't think too much about [Dubai], but now knowing there is all the beautiful buildings that you see on the internet, but then there is still the little streets and markets that you don't get to see because they don't put that on the internet as a thing. But that to me is still appealing" (VP11).

VP4 stated that the urban shopping destination *"stood out"* when viewed in VR, as it was a place they had never visited before, which demonstrated the potential of immersive VR in generating curiosity in the mind of potential visitors and generating attitude change (Tussyadiah et al., 2016). More specifically, the 360-degree experience stimulating a sense of presence was the main factor that enabled participants to gain a more holistic picture of the urban shopping destination. Additionally, viewing the urban place's retail offer in VR is useful for providing potential visitors with an insight into the size and location of the shops. This is important for informing potential visitors of what to expect upon arrival and will also help with pre-trip planning. For example, if the visitor is looking for a larger

store or a specific brand, they can browse in various malls to find the largest brand store, rather than wasting time upon arrival. By providing potential visitors with a more insightful view of the urban shopping destinations offerings and allowing them to browse in shops in VR could lead to attitude change toward the place and in turn, this could lead to more informed decisions on where to visit.

> *"It was the whole [360-degree video] experience on the headset. The destination stood out. I've never been to the destination" (VP4).*

> *"It is very interesting because sometimes when you hear about certain shops in the destination, you never really know if it is going to be a small shop or a large shop…it was good to get a feel of what the shops will be like before actually visiting the mall" (VP2).*

> *"I think if a new shop is opening and they give out [a VR experience] to new customers or those who already know the layout of the shopping centre and things like that, so they actually know where to go and the products they actually want, I think that is quite a good idea" (VP6).*

Overall, the findings suggested that presence could potentially influence positive attitude change by enabling potential visitors to gain a more complete view of the urban shopping destination prior to visiting. More specifically, the VR retail environment cues that stimulate feelings of presence could influence attitude. For example, increasing the sense of presence using virtual aesthetics and virtual atmospherics could have a more profound positive effect on attitude towards the urban shopping destination viewed in VR and towards using VR applications for retail purposes. Additionally, as highlighted in the interactivity section, the ability to interact with the VR retail environment (e.g. inspect products) and communicate with others in VR (i.e. social presence) would enhance the experience and increase presence. Therefore, it could be assumed that by doing so, this would increase participants overall attitude towards using VR. Looking back at the usability and layout design discussions, it could be assumed that VR hardware and software that is easy to use and easy to navigate, respectively, could generate a deeper sense of presence, which then leads to positive attitude towards VR, while those experiencing problems with VR expressed less positive attitudes given that the ability to

feel present in the VR environment was impaired. Accordingly, the following hypothesis was proposed:

> ***H8:*** *Presence will positively influence attitude.*

7.2.3 Behavioural Intentions (Response)

Behavioural intention is an antecedent of actual behaviour (Ajzen, 1991; Beck and Ajzen, 1991) and can be defined as subjective judgements by people about how they will behave in the future (Blackwell et al., 2006, p.375). In this study, the four sub-themes of behavioural intentions included: 1) intent to visit the retail places featured in VR, 2) intent to recommend VR retail applications to others, 3) intent to use VR retail applications again, and 4) intent to purchase using VR retail applications or a trip post-VR experience.

7.2.3.1 Intent to Visit Retail Places featured in VR

All participants stated they intend to visit the retail places after viewing it in VR. For instance, VP8 stated, *"I would like to visit those different places at the destination now that I have seen it in there".* This indicated how VR could help potential visitors' (VP1-VP12) to initiate travel arrangements and make more informed decisions (Sussman and Vanhagen, 2000) on whether to visit a specific shopping destination and which shopping locations/retailers to visit upon arrival. This could also enhance the on-site experience as *"it would help to plan the trip before you go and then it is all taken care of when you get there"* (VP1). In support of this, VP9 mentioned that previewing the urban shopping destination in VR could make the experience more enjoyable upon arrival, which is particularly relevant for urban shopping destinations that are a long distance from the visitors' home country.

> *"I think it would be less of a shock when you go there as well because you won't feel so out of your element. Because that is one of the scary things about going away especially to long-haul places like Dubai and stuff like that…I think I would want to see what it's like, so I don't feel out of my depth" (VP9).*

However, VP5 and VP10 indicated that this would limit the enjoyment gained from the spontaneity of taking a trip. However, those people apprehensive of visiting new places might prefer to have pre-travel plans and an insight into where they are going, therefore,

previewing the urban shopping destination prior to arrival could depend on the personal characteristics of the visitor (VP10).

VP9, VP10 and VP11 suggested that travel companies could utilise VR as a method to entice potential visitors into the travel agents and create a desire to visit new places. In doing so, this would contribute to creating interest in VR for urban destination marketing purposes. Additionally, VP9 suggested *"pop-up stalls… in marketplaces or in shops or pop-up shops just to test it out and see what people think"*, as this would also enable people to experience VR technology and potentially motivate them to purchase devices to view urban destinations at home.

> *"Maybe if like travel companies used it, so to say if you were exploring different places to go and they gave you it as an option to kind of view places, that would encourage you to use it" (VP10).*

Viewing a retail store, shopping mall, or town centre in VR could trigger interest and generate positive behavioural intentions to visit, which demonstrated the effectiveness of this technology as a retail marketing advertisement method. In support of this, VP12 stated that viewing an urban shopping destination in VR would motivate real-visitation while VP9 even demonstrated interest in visiting the urban shopping destination viewed in VR *("[Dubai] did look pretty cool, I want to go"),* which is an outcome of the VR experience.

> *"[VR] could definitely broaden my horizons. For example, just like in real-life if I saw an advert or I drove past a shop that caught my interest, if a shop caught my interest in VR it would then maybe inspire me to go there in real-life. So, as a tool of advertisement I would say that [VR] could be a good product" (VP3).*
>
> *"That would motivate me to go there" (VP12).*

7.2.3.2 Intent to Recommend VR Retail Applications to others

All participants (VP1-VP12) confirmed they would recommend VR retail applications to others, including friends and family, mainly to help them make better informed decisions on which urban shopping destination, shopping mall or retailer to visit. Additionally, VR provided them with an authentic experience and provided them with extensive information

compared to reading a brochure or an article online (e.g. blog post, forum etc.), and the novelty factor of VR would encourage VP5 and VP7 to recommend others to try it.

> *"[VR] is definitely something I would recommend to others. For example, if I did find a shop that I would not have normally noticed. Because usually I just casually browse in and out of ones I know…then yes, [VR] would be recommended" (VP3).*

> *"Yes, definitely [I would recommend]. Just because I feel like I gained more information from that little video there. I felt like I was experiencing it for myself rather than reading other people's views on like a flat screen" (VP7).*

> *"I definitely would recommend it to others because it is something new" (VP5).*

> *"It's a new experience isn't it. And it's a lot better than just sitting there" (VP7).*

Drawing on the VR retail experience, VP2 stated that VR could help people who dislike crowded malls because they can shop in the ambient shopping mall from the comfort of their own home. Additionally, VP4 indicated that VR could become more widespread following further technological developments.

> *"I think it has got great potential as well especially with shops getting busy and overcrowded at peak times. I could see a lot of people using this technology because they could sit at home and from the comfort of their own home they could do some shopping, for example" (VP2).*

> *"If it is affordable and if it improved any more than it has, I think it would catch on and become a good thing" (VP4).*

7.2.3.3 Intent to use VR Retail Applications again

All participants (VP1-VP12) stated their intent to use similar VR retail applications again in the future because it was *"very useful", "new", "exciting",* and *"you get to see more, the bigger picture".* Consistent with prior research (Jung et al., 2017; Disztinger et al., 2017; Tussyadiah et al., 2016; Huang et al., 2013; Chen and Lin, 2012), visitor participants (VP1, VP9, VP10, VP11) indicated they would use VR as a travel planning tool and for decision-making on places to visit. For instance, VP9 stated that VR is useful for viewing

a variety of destinations and their touristic and retail offerings as *"it's a much better method of comparing destinations".*

The ability to navigate or direct the experience in a desired location (such as with Google Street view) would allow potential visitors to tailor the experiences to their own preferences such as urban shopping destinations and retail places to visit, which would *"make the whole experience a lot better and more comfortable"* (VP1). Having more control over which urban shopping destinations to view in VR would be more useful and make the experience more personalized (VP10). Additionally, features such as being able to *"bookmark different places"* (VP9) to later compare them would be useful.

After experiencing VR for the first time in this study, VP1 mentioned that VR *"would be the first thing I use now"* to view urban shopping destinations prior to visiting because it generated a sense of presence and it would therefore make the on-site experience more enjoyable. More specifically, VP1 explained:

> *"[VR] would be the first thing I use now [to search for cities to visit] if it was available to me. You get more information and more of a feel of a place before you went there, so you feel like you have actually been there, and it would make your visit more enjoyable when you are actually there".*

In comparison to browsing and shopping online, VR retail applications are considered limiting because they do not have the wealth of information and diversity of content (VP9). For example, when searching online, potential visitors are able to search through various travel agencies, blogs, social media etc., thus, suggesting that they could make more informed choices by the wealth of online information (VP9). Nevertheless, should future VR developments provide access to more content within the same application, then VR could be potential visitors' go-to platform for browsing potential urban places to visit. Finally, VP5 argued that the internet is currently more advantageous given the wealth of accessible information compared with VR, however, should VR become more accessible, improved features and more content produced, then VR would be the preferred choice.

"If it had all the things online has to offer like looking around places, different hotels etc. then it would be ten million times better and it would be your main go-to thing of looking at holiday destinations. It would be mine if it had all that" (VP9).

"I would [use it again] to see other destinations, not just one. With improved graphics and more sound effects, it would be good. It definitely has potential to be used for that purpose" (VP5).

7.2.3.4 Intent to Purchase

Purchase intentions refer to what the user thinks he/she will buy (Blackwell et al., 2006). In this study, the intent to purchase explored participants' intention to purchase a trip to the urban shopping destination post-VR experience and/or purchase products using VR retail applications. Drawing on Application A, VP1 and VP4 stated that experiencing an urban shopping destination in VR could influence potential visitors to book trips immediately rather than taking the marketing material home afterwards as with other methods (e.g. brochures). VP4 stated that the intent to purchase could apply to the younger market largely because of VRs ability to provide immersive, multisensory experiences that stimulate affective states such as excitement.

"If it was in Thomas Cook I would definitely be more likely to buy the holiday - they would sell it to me without a doubt. With a brochure, I am more likely to take it home, have a think on it and then probably go off the idea… [I would] definitely be tempted to buy a holiday" (VP1).

"You could easily see 18-30 holidays in VR. If the young ones put the headset on and they are in a nightclub that would definitely get them to visit" (VP4).

Application B was considered more of a *"viewing experience, where you are searching for something you may need"* (VP5). Therefore, participants were more inclined to look closely at the products, perhaps with the intention to purchase, which indicated the influence of interactivity on intent to purchase. VP1 and VP11 mentioned that purchasing in VR would be useful for grocery shopping. However, this is directed more at home use rather than when visiting urban shopping destinations.

"Even the products on the shelves…I just wish I could have seen them closer up and inspect them" (VP5).

"If you do end up being able to buy stuff, I mean supermarkets would be a good one" (VP11).

VP11 also mentioned that viewing a catwalk and then being able to buy items viewed on the catwalk would be of interest, which indicated that VR could be useful for fashion shoppers. VP12 would enjoy browsing in VRR stores, however, the inability to try items on, see and feel them for real would reduce this participants willingness to purchase in VR. VP1, VP7 and VP9 expressed interest in being able to access promotions and *"if you could get discounts and stuff then you would probably switch to that"* (VP7).

Overall, the interview data indicated that VR retail applications could lead to four positive behavioural outcomes in the urban shopping destination context. As outlined in the above sections, the interview data indicated that participants affective (i.e. emotional arousal) and cognitive (i.e. attitude) states could positively affect their behavioural intentions towards the urban shopping destination viewed in VR. Therefore, the following hypotheses were proposed:

H9: *Emotional arousal will positively influence behavioural intentions*

H10: *Attitude will positively influence behavioural intentions.*

7.3 Summary

A summary of the themes and sub-themes are presented in Table ***7.1***. The final column presents several related studies investigating the variables in other contexts such as v-commerce, e-commerce, m-commerce and VR tourism research. The emergent sub-themes as indicated in the table are those that have not been previously identified specifically in the context of this study.

Table 7.1 Themes and Sub-themes

Main Theme	Sub-Theme	Several Related Studies Investigating these Variables in Other Contexts
Virtual Retail environment	*Virtual Aesthetics**	Lee (2018); Sahoo and Pillai (2017); Pantano et al., (2017); Liu et al., (2016);
	*Virtual Atmospherics**	Prashar et al., (2017); Huang (2017); Gao and Bai (2014); Floh and Mandleberger (2013); Wu et al., (2013)
	Interactivity	Schnack et al., (2018); Vonkeman et al., (2017); Sahoo and Pillai (2017); Pantano et al., (2017)
	*Social Presence**	Lu et al., (2016)
	*Layout Design**	Krasonikolakis et al., (2018); Wu et al., (2013); Ogonowski et al., (2014); Hassanein and Head (2007)
	Usability	Schnack et al., (2018); Sahoo and Pillai (2017)
Presence		Martinez-Navarro et al., (2019); Schnack et al., (2018); Tussyadiah et al., (2018); Krasonikolakis et al., (2018); Vonkeman et al., (2017); Fiore et al., (2005)
Internal States	Emotional Arousal	Huang (2017); Wu et al., (2013)
	Attitude	Sahoo and Pillai (2017); Pantano et al., (2017); Pantano and Corvello (2014); Wu et al., (2013); Hassanein and Head (2007); Fiore et al., (2005)
Behavioural Intentions	Intention to Visit Places Viewed in VR	Kim et al., (2018); Tussyadiah et al., (2018);
	Intention to Recommend VR to Others	Krasonikolakis et al., (2018)
	Intention to Use VR Again	Loureiro and Roschk (2014); Wang et al., (2011)
	Intention to purchase	Martinez-Navarro et al., (2019); Krasonikolakis et al., (2018); Prashar et al., (2017); Lu et al., (2016); Gao andBai (2014); Chang et al., (2014); Wu et al., (2013); Wang et al., (2011); Fiore et al., (2005)

**Emergent theme in this study*

(Source: Authors own)

Table ***7.2*** provides a summary of the hypotheses provided at the end of each section throughout this visitor interview analysis chapter. The hypotheses indicated the relationships between several VR retail environment cues and presence, presence and emotional arousal/attitude and emotional arousal/attitude and behavioural intentions.

Table 7.2 Hypotheses Developed from the Visitor Interview Analysis

	Hypothesis
H1:	Virtual atmospherics will positively influence presence.
H2:	Virtual aesthetics will positively influence presence.
H3:	Interactivity will positively influence presence.
H4:	Social presence will positively influence presence.
H5:	Layout design will positively influence presence.
H6:	Usability will positively influence presence.
H7:	Presence will positively influence emotional arousal.
H8:	Presence will positively influence attitude.
H9:	Emotional arousal will positively influence behavioural intentions.
H10:	Attitude will positively influence behavioural intentions.

(Source: Authors own)

7.3.1 Synthesis of Industry and Visitor Interviews

The visitor interview data was synthesised with the industry interview data in order to determine the commonalities and differences between each sets of data. The findings are categorised into key themes. Many commonalities were found including perceived benefits and perceived barriers of VR, visitor acceptance, usability, costs associated with VR and VR content. The differences were generally concerned with the focus of interest regarding VR. For instance, the urban place marketers were largely concerned with factors associated with the feasibility of implementing this technology for visitor consumption, whereas visitor participants were concerned with the user experience and design elements of the VR experience. These findings are summarised in Appendix 12.3.

7.3.2 Justification for Stimuli included in the Model

In this study, atmospherics refers to the design of the VR retail environment to produce specific emotional effects in the potential visitor that enhance his/her behavioural intentions (adapted from Kotler, 1973-1974). The studied sensory channels in the current research include sight and sound and the potential of touch where virtual atmospherics encompasses *sight* and *sound* and virtual aesthetics refers to the visual designed environment *(sight).* While the combination of sight and sound was considered important

to increase feelings of presence (Jung et al., 2017; Martins et al., 2017), the visitor interviews draw largely on the visual design factors, hence, both virtual atmospherics and virtual aesthetics were included as stimuli in the proposed model. As an antecedent of presence (Klein, 2003; Coyle & Thorson, 2001; Steuer, 1992), interactivity is considered an important feature for VR applications (Hudson et al., 2019; Schnack et al., 2018) and during the visitors interviews, the desire to interact with virtual products *(touch)* was considered important for the experience to be perceived as more realistic. Both interactivity and layout design represent two atmospheric cues that are only applicable to virtual retailing channels. Scholars have investigated the influence of layout design on shopper behaviour in virtual store environment research (e.g. Vrechopoulos et al., 2009), and as VR technology advances offering the ability to navigate using various eye tracking or handheld devices, layout design could become an important stimulus for VR retail environments.

Similar to servicescape research (e.g. Baker et al., 1994; Mari and Pogessi, 2011; Rosenbaum and Massiah, 2011), the social dimensions were a prominent theme during the visitor interviews to create a more realistic environment. This atmospheric cue has also been considered in the development of effective and enjoyable VR applications (Hudson et al., 2019; White-Baker et al., 2019) and was therefore integrated into the proposed model. Drawing on technology adoption research, the usability of VR was investigated as participants may not be accustomed to using VR HMDs (McKone et al., 2016). Therefore, the usability of the HMD, rather than the actual VR retail application, could be a potential determinant of VR adoption. The usability of VR was a recurrent topic of conversation during both the visitor and industry interviews, hence, usability was integrated as stimuli in the proposed model. Overall, these specific atmospheric cues were employed in the survey because they were most prominent themes emerging from the exploratory visitor interviews. Initially, the topics explored during the visitor interviews were drawn from the reviewed literature on physical and virtual retailing research. Of these topics, it became evident during the interviews that the most common points of discussion and attention given by interviews participants was virtual atmospherics, virtual aesthetics, interactivity, social presence, layout design and usability.

7.3.3 Justification for Organisms included in the Model

Presence is arguably one of the most important factors of persuasive VR applications (Tussyadiah et al., 2016) and in this study, participants discussed the extent to which the proposed stimuli influenced feelings of presence in both Application A and Application B. The extent to which the stimuli influenced feelings of presence was a determinant of how effective the VR retail application was perceived to be. Greater feelings of presence as a result of effective stimuli meant that the VR retail application was more persuasive in influencing emotions and attitudes. Researchers have investigated the relationship between presence and atmospheric cues (Schnack et al., 2018; Jung et al., 2017; Tussyadiah et al., 2016), presence and emotions (Martinez-Navarro et al., 2019; Gorini et al., 2011), and presence and attitude (Tussyadiah et al., 2018), which further supports the inclusion of presence as an organism component within the proposed model.

The exploratory visitor interviews indicated that potential visitors could experience a variety of both positive and negative emotions given the level of immersion that VR creates. Therefore, emotional arousal was employed in the model to encompass the potential positive and negative emotions experienced by potential visitors when experiencing VR retail applications and to adhere to calls for further research examining both categories of emotions (Liu, 2016). In prior S-O-R research, emotional arousal has been employed as an organism construct mediating the relationship between stimuli and response in prior virtual retailing research (e.g. Wu et al., 2013). While many other studies have relied on Mehrabian and Russell's (1974) PAD scale of emotions, particularly pleasure and arousal (De Nisco and Warnaby, 2014; Blackwell et al., 2006), it could be argued that considering these three emotional states only does not capture the specific and various emotional responses experienced from using VR retail applications (e.g. relaxed, content, amused or sad, fear or distressed). Therefore, it was anticipated that employing a reliable and valid scale of emotions such as Izard's (1977) Differential Emotions Scale could represent more fully the emotional experience of potential visitors as it considers ten fundamental positive and negative emotions. In support of this, prior studies (e.g. Correia et al., 2017; Li et al., 2015; Jang and Namkung, 2009) support its validity in relation to visitor behaviour and tourism destinations. Additionally, while not employing Izard's (1977) scale of emotions directly, prior studies have employed a similar

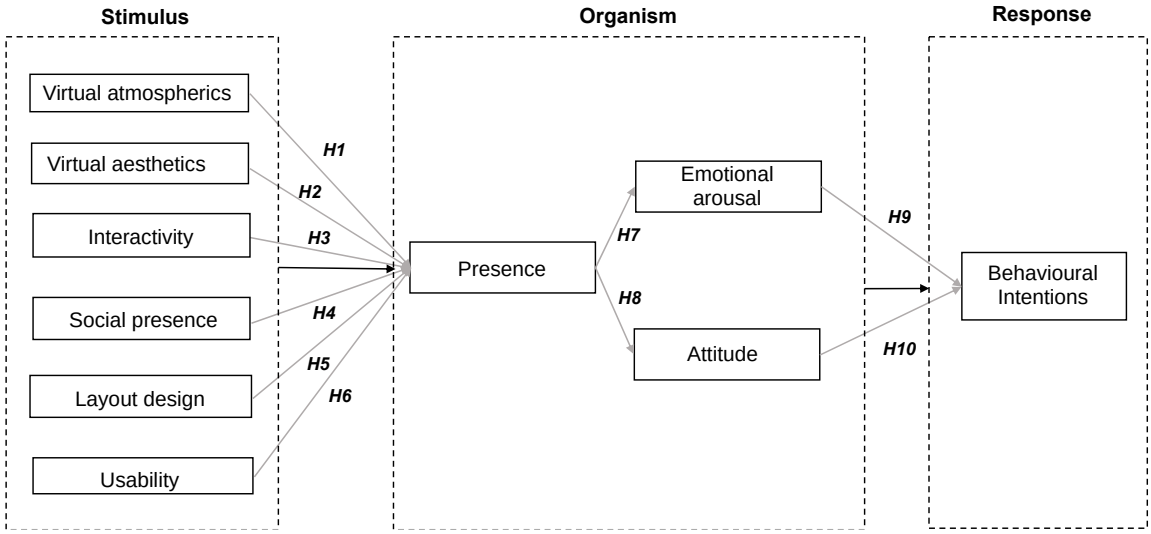
variety of emotions such as amusement, contentment, joy and delight when investigating user acceptance of VWs in travel and tourism marketing (Huang et al., 2013).

Previously, researchers (Fiore et al., 2005; Klein, 2003; Kim & Biocca, 1997) have suggested a positive correlation between presence and attitude including in VR (e.g. Tussyadiah et al., 2018) and e-commerce research (e.g. Hyun & O'Keefe, 2012). For instance, VR presence has been found to influence attitude change towards destinations being viewed (Tussyadiah et al., 2018) while in the context of e-commerce, research suggests that presence influences positive virtual destination image (Hyun & O'Keefe, 2012). In the current research, the stimuli effective in enhancing presence was considered more persuasive in influencing attitudes towards the VR retail application, hence, attitude was included as an organism component within the proposed model. Additionally, the relationship between affective and cognitive states and behavioural intentions (Wu et al., 2013; Eroglu et al., 2001) has been well established, which further supports the hypothesised relationship between both emotional arousal and attitude and behavioural intentions.

7.3.4 Proposed Qualitative VR Visitor Behaviour S-O-R Model

Based on the interview data synthesis and hypotheses, a VR Visitor Behaviour S-O-R Model was proposed (see Figure **7.1**). In the model, the sub-themes became variables (Creswell, 2006). Marchiori et al., (2018) suggested that further investigation on behavioural responses using a Likert scale is required in order to explore the variability of the intentions on the willingness to repeat the experience, recommend the experience, visit a place and generate WOM. Both sets of qualitative data assisted with achieving Research Phase 1 of the mixed method approach and guided the development of items and scales for the quantitative survey instrument (Creswell, 2006). To measure the constructs, pretested items were used from prior studies (see 12.14). During Research Phase 2 of the mixed method approach, the instrument and therefore the qualitative model was implemented and validated quantitatively (Creswell, 2006) and these findings are presented in Chapter 8.

Figure 7.1 Proposed VR Visitor Behaviour S-O-R Model



(Source: Authors own)

Chapter 8 – Quantitative Data Analysis

8.1 Introduction

The purpose of this chapter is to present the analysis of the quantitative data. The chapter begins with a brief overview of the analysis techniques employed before moving on to the descriptive analysis and presenting the demographic profile of survey respondents. Then, the findings from the analysis of the measurement model are presented. The final section details the structural model analysis including how the VR Visitor Behaviour S-O-R Model was generated.

8.2 Quantitative Findings

This section presents an in-depth analysis of the quantitative data that was gathered by survey technique and input into IBM SPSS 25 before being analysed using PLS-SEM. In total, 158 responses were collected, however, eight survey responses were incomplete and were therefore removed from the data set leaving 150 total survey responses for the analysis. The following subsection presents the descriptive statistics of respondents before presenting the two-step approach to analysing the PLS-SEM results (Henseler, 2010). Accordingly, the first step presents the measurement model evaluation, and this is followed by the structural model evaluation.

8.2.1 Descriptive Analysis

Table ***8.1*** presents an overview of the demographic profile of survey respondents. In accordance to the predetermined quota, the highest portion of respondents were male (58.7%). This study intentionally targeted a greater percentage of Millennials aged between 18 and 34 years (74%) followed by a combination of Generation X and Baby Boomers aged between 35 and 64 years old (26%). This was based on the secondary data on both VR users combined with the typical demographic for the travel retail market as outlined in Chapter 5 (see 5.5.4).

Regarding occupation, it can be seen that the majority of participants were employed (46%) or students (45.3%) and the remaining were self-employed (5.3%) or preferred not to provide this information. The annual pre-tax income was mostly up to £29,000 (61.3%);

however, the non-response rate was high for this variable with over a quarter of respondents choosing not to provide this information. Over half of respondents were from the UK (62%) and the remaining 38% were from seventeen countries throughout Europe, Asia, Africa and the Middle East. The data was intentionally gathered from respondents from various destinations, rather than the UK only, in order for it to provide insights from the various different types of visitors urban retail destinations attract. No respondents had difficulty with English language, therefore, this did not have any effect on respondents ability to understand and experience the VR retail application or to understand the data collection process. Towards the end of the survey, a question regarding whether respondents had used VR prior to taking part in this study was included. The results revealed that 50% of respondents had experienced VR before and 50% were experiencing VR for the first time in this study.

Table 8.1 Demographic Profile of Survey Respondents

	Total/150	%			Total/150	%
Gender				**Country of Origin**		
Male	88	58.7%		UK	93	62%
Female	61	40.7%		Russia	2	1.3%
Prefer not to say	1	0.7%		Spain	8	5.3%
				Malaysia	7	4.7%
Age				China	10	6.7%
18-21	30	20%		USA	1	0.7%
22-34	81	54%		Kazakhstan	1	0.7%
35-44	22	14.7%		Lithuania	2	1.3%
45-54	13	8.7%		Ireland	6	4%
55-64	4	2.7%		Poland	6	4%
65+	0	0%		Qatar	1	0.7%
				Turkish Islands	1	0.7%
Occupation				Denmark	2	1.3%
Employed	69	46%		Vietnam	2	1.3%
Self-employed	8	5.3%		Netherlands	1	0.7%
Unemployed	0	0%		Thailand	2	1.3%
Student	68	45.3%		Greece	3	2%
Retired	0	0%		Africa	3	2%
Prefer not to say	5	3.3%				
Annual pre-tax income				**Previous VR Usage**		
Less than £10,000	47	31.3%		Yes	75	50%
£10,000 – £29,000	45	30%		No	75	50%
£30,000 - £49,000	18	12%				
£50,000 - £69,000	1	.7%				
More than £70,000	0	0%				
Prefer not to say	39	26%				

(Source: Authors own)

8.2.2 Measurement Model

8.2.2.1 Assessment of Visitor Behaviour Model Constructs

As previously mentioned, the survey included questions related to ten constructs (virtual atmospherics virtual aesthetics, layout design, interactivity, social presence, usability, presence, attitude, emotional arousal and behavioural intentions) and a total of 60 measurement items. The measurement model displays the relationships between the constructs and the measurement items (i.e. indicator variables) (Hair et al., 2017). In this study, the measurement model is reflective rather than formative given that each latent variable (i.e. construct) is made up of several observed measurement items that are highly correlated and interchangeable, as opposed to being not interchangeable as with a formative model (Wong, 2013). The goal of the reflective measurement model assessment was to ensure the reliability and validity of the construct measurement items and therefore provide support for the suitability of their inclusion in the path model (Hossein, 2017).

As a reflective model is used, the following topics are discussed throughout this measurement model section as suggested by Hair et al., (2017): internal consistency (Cronbach's alpha, composite reliability), convergent validity (indicator reliability, Average Variance Extracted (AVE)) and discriminant validity. Additionally, steps to control for common method bias (CMB) are presented. Each topic is discussed more thoroughly in the relevant subsections.

8.2.2.1.1 Internal Consistency

Internal consistency is a measure of reliability that reflects the extent to which the items within the survey instrument measure various aspects of the same construct (Revicki, 2014). Cronbach's alpha is the traditional criterion for internal consistency that is often used in social science research (Hair et al., 2017; Wong, 2013). However, Cronbach's alpha is sensitive to the number of items in the scale and generally tends to underestimate the internal consistency reliability (Hair et al., 2017). Therefore, researchers (e.g. Hair et al., 2017, 2012; Bagozzi and Yi, 1988) have suggested that composite reliability can offer a suitable replacement of Cronbach's alpha and Hair et al., (2017) argued that it is reasonable to consider and report both criteria. Therefore, both the Cronbach's alpha and

composite reliability results have been determined in order to check for internal consistency as outlined below.

8.2.2.1.1.1 Cronbach's Alpha

First, Cronbach's alpha was carried out on all ten constructs, which included 60 items overall. The process was conducted in IBM SPSS 25 same as in the pilot study (see 5.4.2.4). The aim of the reliability analysis was to remove any items that did not sufficiently contribute to the reliability and validity of the proposed scales.

First, the *virtual atmospherics* scale comprised of five items and Cronbach's alpha showed the scale to reach acceptable reliability (α = 0.816). Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted. There were two exceptions to this including item two (dull – bright) and item three (lively – unlively), which would increase the alpha to α = 0.827 and α = 0.825, respectively. As such, removal of item two was conducted in order to result in α = 0.845. Three items remained and removal of one item (attractive – unattractive) would increase α = 0.884. However, as only three items remained, and Cronbach's alpha was fairly high, this item was not removed.

The *virtual aesthetics* scale was comprised of five items and Cronbach's alpha showed the scale to reach acceptable reliability (α = 0.845). Item five (the look and feel of the virtual shopping environment is important when using VR to shop) would increase alpha to α = 0.887. Therefore, this item was removed resulting in a higher Cronbach's alpha (α = 0.887) and when the test was run again, the remaining four items would result in a decrease in alpha if deleted. Similarly, the *layout design* scale was comprised of three items and the *interactivity* scale was comprised of five items. Cronbach's alpha showed the scale for both layout design (α = 0.826) and interactivity (α = 0.905) to reach acceptable reliability with all items appearing worthy of retention. The *social presence* scale was comprised of four items, and Cronbach's alpha indicated that the scale was below the generally agreed acceptable reliability level of 0.7 (Hair et al., 2006) (α = 0.611). Removal of item four (using the VR shopping applications to interact with others would create a warm environment for shopping) increased the alpha to α = 0.822 and the final scale consisted of three items.

The usability scale was comprised of five items and Cronbach's alpha showed the scale to reach acceptable reliability (α = .793). Item five (i.e. 'I would imagine that most people would learn to use the VR shopping application very quickly') was removed in order to increase alpha to α = .840 and the final scale comprised of four items. The presence scale was comprised of six items and the attitude scale was comprised of four items. Cronbach's alpha showed the scale to reach acceptable reliability for both presence (α = 0.879) and attitude (α = 0.935) with all items worthy of retention. The emotional arousal scale was comprised of ten items and Cronbach's alpha showed the scale to reach acceptable reliability (α = 0.803). Items six to ten, which were all negative emotions including sad (α = 0.81), anxious (α = 0.805), fear (α = 0.806), anger (α = 0.806), and distress (α = 0.809) where higher than the initial alpha. Once these five items were removed, Cronbach's alpha increased to α = 0.953 and all items appeared worthy of retention. The final scale for emotional arousal had five remaining items, which were all positive emotions.

The behavioural intentions scale was comprised of twelve items and Cronbach's alpha showed the scale to reach acceptable reliability (α = 0.874). All items appeared to be worthy of retention except item four (i.e. 'I am willing to recommend this VR shopping application'). Therefore, this item was removed, and the test was conducted again, resulting in a higher alpha (α = .953). Then, the results indicated that item one (i.e. 'I gained an interest in actually visiting in person the shopping destination viewed in VR') would increase alpha even higher (α = .955). Therefore, item one was removed, and the test was ran again resulting in higher alpha (α = .955). However, the results then showed that removal of item two (I intend to visit the places featured in VR) and item three (I want to try to visit the shopping destination viewed in VR in the future) would increase alpha to α = .957. As there were ten remaining items at this stage, both item two and item three were removed resulting in a final alpha of α = .964. Eight items remained for the behavioural intentions scale and were worthy of retention resulting in a lower alpha score if removed.

Overall, fourteen measurement items were removed in order to improve the reliability of the survey. This resulted in 46 measurement items remaining including 45 measurement

items and one marker variable. Table ***8.2*** shows the final Cronbach's alpha scores for each construct and the items that remained.

Table 8.2 Final Cronbach's Alpha

Variable	Cronbach's Alpha	No. of Items	Items
Virtual atmospherics	α = .845	3	1. Unattractive/attractive 2. Boring/stimulating 3. Unexciting/exciting
Virtual aesthetics	α = .887	4	1. Monotonous/fascinating 2. Conventional/creative 3. Unremarkable/impressive 4. The aesthetics of the VR shopping application promotes a perception of quality.
Layout design	α = .826	3	1. Helpful signage/Unhelpful signage 2. Easy to navigate/Difficult to navigate 3. Organised layout/Unorganised layout
Interactivity	α = .905	5	1. The VR shopping application has a high degree of interactivity. 2. I can interact with the VR shopping application in order to get information tailored to my specific needs. 3. The interactivity functions allow me to customise content. 4. The interactivity functions can satisfy my requirements. 5. The VR shopping application has interactive features, which help me accomplish my task.
Social presence	α = .822	3	1. I would prefer if there was a sense of sociability in the VR shopping application. 2. Using the VR shopping application to interact with others would create a sociable environment for shopping. 3. Using the VR shopping application to interact with others would create a personal environment for shopping.
Usability	α = .840	4	1. I thought the VR shopping application was easy to use. 2. I felt confident using the VR shopping application. 3. I found the VR shopping application very awkward to use. 4. I needed to learn a lot of things before I could get going with the VR shopping application.
Presence	α = .879	6	1. After experiencing the VR shopping application, I felt like I came back to the "real world" after a journey. 2. The VR shopping experience created a new world for me. 3. The virtual world suddenly disappeared when I took off the VR headset. 4. While I was experiencing the VR shopping application, I felt like I was in the shop.

			5. While I was experiencing the VR shopping application, I sometimes forgot that I was in the middle of an experiment. 6. While I was experiencing the VR shopping application, my body was in the room, but my mind was inside the virtual world.
Attitude	α = .935	4	1. Positive/negative 2. Favourable/unfavourable 3. Interesting/uninteresting 4. Unpleasant/pleasant
Emotional arousal	α = .953	5	1. Amusement 2. Interest 3. Contentment 4. Joy 5. Delight
Behavioural intentions	α = .964	8	1. I will encourage friends and family to use the VR shopping application. 2. If asked, I will say positive things about the VR shopping application. 3. Assuming I have access to the VR shopping application, I intend to use it. 4. I will return to the VR shopping application the next time I need a high-tech product. 5. It is very likely I will return to using VR for shopping. 6. I intend to purchase through VR shopping applications in the near future. 7. It is likely I will purchase through VR shopping applications in the near future. 8. My willingness to buy through VR shopping applications is high.

(Source: Authors own)

8.2.2.1.1.2 Composite Reliability

Then, the data were input into Smart PLS and the composite reliability was determined. As it can be seen from Table ***8.3*** below, all values are larger than 0.6, which is considered the lowest acceptable figure for composite reliability in exploratory research according to Bagozzi and Yi (1988) and more recently Hair et al., (2017). Overall, this means that high levels of internal consistency reliability have been demonstrated among all reflective latent variables, which further supported the Cronbach's alpha results.

8.2.2.1.2 Convergent Validity

Convergent validity and discriminant validity are two fundamental aspects of construct validity (Krabbe, 2017). According to Hair et al., (2017, p. 112), convergent validity is *"the extent to which a measure correlates positively with alternative measures of the same construct".* Accordingly, the construct should correlate with related variables but should not correlate with dissimilar, unrelated ones (Krabbe, 2017). To evaluate convergent validity of reflective constructs, the outer loadings of the indicators (i.e. indicator reliability) followed by the AVE were considered as suggested by Hair et al., (2017).

8.2.2.1.2.1.1 Indicator Reliability

The indicator reliability indicates the proportion of indicator (i.e. measurement item) variance that is explained by the latent variable (Hamid, Sami, and Sidek, 2017). Items that have high loading on its parent construct (Schumaker and Lomax, 2012; Kline, 2010; Hair et al., 2010) with low cross-loading on other factors support good convergent validity. A common rule of thumb is that the standardised indicator's outer loadings should be 0.708 or higher (Hair et al., 2017). As it can be seen from Table ***8.3*** below, all of the measurement items have individual indicator reliability values that are larger than the minimum level of 0.4 and most are closer to the preferred level of 0.7 (Hair et al., 2017; Wong, 2013; Hulland, 1999).

8.2.2.1.2.1.2 Average Variance Extracted

To further check convergent validity, each latent variable's AVE was evaluated. As it can be seen in Table ***8.3***, all of the AVE values are greater than the acceptable threshold of 0.5 (Hair et al., 2010; Urbach and Ahlemann, 2010; Bagozzi and Yi, 1988), which further supported that convergent validity is confirmed.

Table 8.3 Results Summary for Reflective Outer Model

Latent Variable	Measurement Items	Indicator Reliability	Composite Reliability	AVE
Virtual Atmospherics	Exciting	0.819	0.906	0.763
	Stimulating	0.767		
	Attractive	0.813		
Virtual Aesthetics	Fascinating	0.739	0.912	0.722
	Creative	0.778		
	Impressive	0.783		
	Perception of Quality	0.858		
Layout Design	Helpful Signage	0.828	0.898	0.746
	Easy to Navigate	0.873		
	Well Organised Layout	0.660		
Interactivity	High Degree of Interactivity	0.792	0.923	0.707
	Tailored Info	0.858		
	Customize	0.781		
	Satisfy Requirements	0.659		
	Accomplish Task	0.874		
Social Presence	Sociability	0.769	0.893	0.736
	Sociable Environment	0.925		
	Personal Environment	0.645		
Usability	Easy to Use	0.901	0.896	0.685
	Confident	0.878		
	Awkward	0.615		
	Learn a Lot Before Using	0.520		
Presence	Real World Journey	0.646	0.907	0.621
	Created New World	0.755		
	Virtual World Disappeared	0.602		
	Felt in the Shop	0.874		
	Middle of Experiment	0.710		
	Body in Room/Mind in VR	0.822		
Attitude	Positive	0.951	0.954	0.837
	Favourable	0.919		
	Interesting	0.827		
	Pleasant	0.839		
Emotional Arousal	Amusement	0.916	0.963	0.839
	Interest	0.862		
	Contentment	0.863		
	Joy	0.906		
	Delight	0.920		
Behavioural Intentions	Intent to encourage friends and family to use VR (B15)	0.911	0.968	0.789

	Intent to say positive things about the VR shopping application (B16)	0.924		
	Intent to use VR shopping application (B17)	0.958		
	Intent to return to using VR shopping application (B18)	0.803		
	Likeliness to return to using VR shopping application (B19)	0.853		
	Intent to purchase through VR shopping application (B10)	0.794		
	Likeliness to purchase through VR shopping application (B11)	0.858		
	Willingness to buy through VR shopping application (B12)	0.838		

(Source: Authors own)

8.2.2.1.3 Discriminant Validity

According to Hubley (2014), *"evidence for discriminant validity is provided when measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be related to each other".* In other to check for discriminant validity, three steps were taken including checking the cross-loadings, the Fornell-Larcker (1981) criterion, and finally the Heterotrait-Monotrait Ratio (HTMT).

First, the cross-loadings were determined. According to Hair et al., (2017), an indicator's outer loading on the associated construct should be greater than any of its cross-loadings (i.e. its correlation) on other constructs. The analysis of cross-loadings revealed that the loadings exceeded the cross-loadings on all constructs, which suggested that discriminant validity is well established (Hair et al., 2017).

The second approach to assessing discriminant validity is the Fornell-Larcker (1981) criterion (Hair et al., 2017). Fornell and Larcker (1981) suggested that the square root of AVE of a construct has to be higher than the constructs correlations with other constructs for good discriminant validity. The Fornell-Larcker criterion analysis drawn from PLS is written in bold on the diagonal of Table ***8.4*** below. The results indicated that the square root of AVE for each latent variable is larger than the correlation values in the column of each latent variable and also larger than those in the row of each latent variable. Therefore, the results indicated that discriminant validity is well established.

Table 8.4 Fornell-Larcker Criterion Analysis for Checking Discriminant Validity

	Attitude	Behavioural Intentions	Emotional Arousal	Interactivity	Layout Design	Presence	Social Presence	Usability	Virtual Aesthetics	Virtual Atmospherics
Attitude	**0.915**									
Behavioural Intentions	0.771	**0.888**								
Emotional Arousal	0.834	0.792	**0.916**							
Interactivity	0.669	0.534	0.58	**0.841**						
Layout Design	0.701	0.49	0.566	0.646	**0.863**					
Presence	0.64	0.708	0.643	0.637	0.557	**0.788**				
Social Presence	0.462	0.501	0.419	0.378	0.408	0.414	**0.858**			
Usability	0.415	0.494	0.416	0.444	0.47	0.4	0.33	**0.828**		
Virtual Aesthetics	0.807	0.678	0.762	0.669	0.692	0.633	0.418	0.34	**0.85**	
Virtual Atmospherics	0.807	0.641	0.744	0.606	0.617	0.569	0.419	0.371	0.769	**0.873**

(Source: Authors own)

Finally, the HTMT, which is a ratio between-trait correlations to the within-trait correlations, was used to determine whether there is discriminant validity (Hair et al., 2017). Specifically, HTMT is an estimate of what the true correlation between two constructs would be, if they were perfectly measured (i.e. if they were perfectly reliable) (Hair et al., 2017). A HTMT value above 0.9 suggests a lack of discriminant validity (Hair et al., 2017). As it can be seen from Table ***8.5***, the majority of correlations are below 0.9 except for the correlation between virtual atmospherics and attitude (0.908), which is just above the recommended value and therefore indicated a potential threat to discriminant validity. However, as both the cross-loadings and Fornell-Larcker (1981) results confirmed discriminant validity and this figure is only slightly above the recommended value of 0.9, it could be concluded that overall, discriminant validity is confirmed.

Table 8.5 HTMT Ratio

	Attitude	Behavioural Intentions	Emotional Arousal	Interactivity	Layout Design	Presence	Social Presence	Usability	Virtual Aesthetics
Behavioural Intentions	0.807								
Emotional Arousal	0.882	0.825							
Interactivity	0.727	0.564	0.626						
Layout Design	0.798	0.544	0.637	0.732					
Presence	0.701	0.755	0.696	0.705	0.648				
Social Presence	0.524	0.558	0.474	0.429	0.487	0.480			
Usability	0.434	0.525	0.444	0.461	0.518	0.427	0.365		
Virtual Aesthetics	0.891	0.734	0.837	0.748	0.807	0.713	0.486	0.360	
Virtual Atmospherics	**0.908**	0.707	0.828	0.691	0.732	0.662	0.512	0.408	0.898

(Source: Authors own)

8.2.2.1.4 Common Method Bias

CMB (i.e. common method variance) refers to the variance that is attributable to the measurement method (e.g. survey) rather than the constructs the measures represent (Podsakoff, MacKenzie, and Lee, 2003). CMB's have potentially significant effects on research findings and conclusions and it is therefore important to take precaution to reduce the potential of CMBs (Podsakoff et al., 2003). In this study, respondents were asked to rate all survey questions at once using self-report method, which meant that CMB was a potential issue (Kim et al., 2018; Podsakoff et al., 2003). Therefore, precautions were taken using several procedural remedies to address this potential issue (Conway and Lance, 2010; Podsakoff et al., 2003). First, consistent with Kim et al., (2018), the introduction section of the survey included a description of the purpose of the study and all respondents were assured anonymity. Second, to help ensure response validity, the definitions of important concepts (e.g. VR) were clearly explained prior to respondents completing the survey and, in some cases, this included a short lecture explaining the concepts and introducing respondents to the research topic. Third, the researcher also provided clear instruction informing respondents that there are no right or wrong answers during this time.

Fourth, the survey was divided into two sections: the first section included measurement items related to the research model and the second section included personal questions about demographic characteristics. Fifth, researchers (e.g. Kim et al., 2018; Algharabat et al., 2017) have also employed Harman's single-factor test (Harman, 1976) and according to Malhotra et al., (2006) this method is highly adopted and recommended to examine common method bias. First, exploratory factor analysis (EFA) was conducted on all variables. The results showed that the extracted sums of squared loadings were 48% of variance. As this is below 50%, it can be concluded that there is not threat of common method bias.

8.2.3 Structural Model Analysis

8.2.3.1 Generating the VR Visitor Behaviour S-O-R Model

The purpose of this study was to find out the relationships between virtual atmospherics, virtual aesthetics, interactivity, social presence, layout design, usability, presence,

emotional arousal, attitude and behavioural intentions. Therefore, a structural equation model was adopted to identify the relationships of all the variables in the entire model. As the previous section outlined, the construct measures are reliable and valid, therefore, the next step was to address the assessment of the structural model results (Hair et al., 2017). The following section details the steps taken in order to conclude with the final model.

More specifically, the section is structured as follows. First, the structural model path coefficients including their size and significance are presented. This is followed by the coefficients of determination (R_2), effect sizes (f_2) and predictive relevance (Q_2). Based on these findings, the model is then reduced to include fewer constructs and this analysis process is conducted again. The chapter concludes with presenting the final S-O-R model. However, prior to reporting the analyses, it is important to examine the model for collinearity, therefore, this data is reported first.

8.2.3.1.1 Collinearity

The Variance Inflation Factor (VIF) value can be used to assess collinearity and according to Hair et al., (2017, 2011), VIF values should be below 5. The results were obtained by running the PLS Algorithm. The results indicated that the VIF for seven items were above the recommended value of 5 and therefore indicated critical levels of collinearity. This included one measurement item for attitude (favourable = 5.290), four measurement items for behavioural intentions (intent to purchase through VR shopping application (B10) = 5.394, likeliness to purchase through VR shopping application (B11) = 7.025, intent to use VR shopping application (B17) = 5.468, likeliness to return to using VR shopping application (B19) = 7.986), and two measurement items for emotional arousal (joy = 8.101, delight = 7.112). Therefore, these seven measurement items were removed from the model resulting in 37 items remaining for the analysis. This resulted in both emotional arousal and attitude consisting of three measurement items and behavioural intentions consisting of four measurement items. The PLS algorithm was ran again and resulted in all VIF values below 5, which indicated no issues with collinearity.

8.2.3.1.2 Structural Model Path Coefficients

The first step to evaluate the structural model was to determine the structural model path coefficients, which represent the hypothesised relationships among the constructs (i.e. the path coefficients) (Hair et al., 2017). Accordingly, the inner model path coefficient sizes and significance explain how strong the effect of one variable is on another variable (Wong, 2013). The weight of different path coefficients assisted with ranking the statistical importance of the constructs (Wong, 2013). In order to determine the path coefficients, the PLS algorithm was performed.

In this study, the inner model suggested that interactivity (0.307) has the strongest direct effect on presence, followed by virtual aesthetics (0.266), social presence (0.109), usability (0.091), virtual atmospherics (0.072) and then layout design (0.044). The hypothesised path relationship between interactivity and presence, virtual aesthetics and presence, and social presence and presence were statistically significant (> 0.1) (Hair et al., 2017). However, the hypothesised relationship between virtual atmospherics and presence, layout design and presence, and usability and presence were not statistically significant given that the standardized path coefficient is lower than 0.1 for all variables. Therefore, these findings suggested that interactivity, virtual aesthetics and social presence are moderately strong predictors of presence, however, virtual atmospherics, layout design and usability do not predict presence directly.

The direct relationship between presence and attitude, presence and emotional arousal, emotional arousal and behavioural intentions, and attitude and behavioural intentions were also observed. The inner model suggested that presence has a stronger effect on emotional arousal (0.639) than attitude (0.637). Attitude has the strongest effect on behavioural intentions (0.471) followed by emotional arousal (0.389). Overall, the hypothesised path relationship between presence and attitude, presence and emotional arousal, emotional arousal and behavioural intentions and attitude and behavioural intentions are statistically significant (> 0.1). Therefore, it can be concluded that presence is a moderately strong predictor of both attitude and emotional arousal, and emotional arousal and attitude are moderately strong predictors of behavioural intentions.

To further assess the significance value of the hypotheses/structural paths, bootstrapping procedure with 5,000 subsamples was performed. Bootstrapping is a nonparametric procedure that allows for testing the statistical significance of various PLS-SEM results (e.g. path coefficients) (Ringle et al., 2015; Efron and Tibshirani, 1986; Davison and Hinkley, 1997). The results of bootstrapping approximate the normality of data (Wong, 2013) and using this method improves the assessment of (non)direct effects, the comparison of effects, and the evaluation of the coefficient of determination (Streukens and Lerio-Werelds, 2016). The beta (β) value indicates the significance of the hypotheses and during the analysis, each path in the hypothesised model was computed (Hussain et al., 2018). According to Hussain et al., (2018), the greater the β value, the more the substantial effect on the endogenous latent construct. The β value then had to be verified for its significance level through the *t*-statistics (Hussain et al., 2018), hence, the *t*-statistics indicated whether the path coefficients of the inner model are significant or not (see Table ***8.6***). Using a two-tailed *t*-test with a significance level of 5%, the path coefficient is considered significant if the *t*-statistic is larger than 1.96 (Wong, 2013).

Looking at Table ***8.6*** below, it can be seen that the linkages between virtual aesthetics and presence (β = 0.266, *t* value = 2.195, $p < 0.05$) and interactivity and presence (β = 0.307, *t* value = 4.208, $p < 0.001$) were significant as the *t*-statistics are above 1.96, thus, providing support for H2 and H4, respectively. The linkage between social presence and presence (β = 0.109, *t* value = 1.769, $p < 0.1$) was just below the recommended significance level (*t* value = < 1.96). The path coefficients among the remaining VR retail environment constructs in the inner model were not statistically significant (< 1.96). This included the relationship between virtual atmospherics and presence (β = 0.072, *t* value = 0.708, $p < 0.5$), layout design and presence (β = 0.044, *t* value = 0.505, $p > 0.5$) and usability and presence (β = 0.091, *t* value = 1.214, $p < 0.5$), therefore, H1, H5 and H6, respectively, were not supported.

Further, as shown in Table ***8.6***, presence had a significantly positive direct effect on emotional arousal (β = 0.639, *t* value = 10.964, $p < 0.001$) and attitude (β = 0.637, *t* value = 12.883, $p < 0.001$), which is consistent with H7 and H8, suggesting that the sense of presence influences an individual's emotional arousal and attitude, respectively.

Additionally, both emotional arousal (β = 0.389, *t* value = 4.122, *p* < 0.001) and attitude (β = 0.471, *t* value = 5.657, *p* < 0.001) had a significant and positive direct effect on behavioural intentions, thus, supporting these hypotheses (H9 and H10, respectively).

Table 8.6 Significance Testing Results for the Structural Model Path Coefficients

Path	**Path Coefficients (β)**	***t* Values**	***p* Values**	**Significance (*p* < 0.05)?**
Virtual aesthetics > Presence	0.266	2.195	0.028	Yes
Virtual atmospherics > Presence	0.072	0.708	0.479	No
Interactivity > Presence	0.307	4.208	0.000	Yes
Layout design > Presence	0.044	0.505	0.613	No
Social Presence > Presence	0.109	1.769	0.077	No
Usability > Presence	0.091	1.214	0.225	No
Presence > Attitude	0.637	12.883	0.000	Yes
Presence > Emotional arousal	0.639	10.964	0.000	Yes
Attitude > Behavioural intentions	0.471	5.657	0.000	Yes
Emotional arousal > Behavioural intentions	0.389	4.122	0.000	Yes

(Source: Authors own)

The total indirect effects among the constructs were also observed and are presented in Table ***8.7*** below. As it can be seen, several indirect relationships were statistically significance (*t* = > 1.96, *p* < 0.05). This included the indirect influence of interactivity on attitude (0.196, *t* = 3.367, *p* < 0.001) followed by emotional arousal (0.196, *t* = 3.897, *p* < 0.001) and then behavioural intentions (0.168, *t* = 3.872, *p* < 0.001). The indirect relationship between virtual aesthetics and attitude (0.169, *t* = 2.115, *p* < 0.05), virtual aesthetics and emotional arousal (0.170, *t* = 2.105, *p* < 0.05) and virtual aesthetics and behavioural intentions (0.146, *t* = 2.068, *p* < 0.05) were also significant. For social presence and attitude (0.069, *t* = 1.761, *p* < 0.1), social presence and emotional arousal (0.070, *t* = 1.778, *p* < 0.1) and social presence and behavioural intentions (0.060, *t* = 1.770, *p* < 0.1) the significance values were both slightly below the recommended level. However, compared with the remaining three VR retail environment constructs (virtual

atmospherics, layout design and usability), social presence demonstrated a stronger relationship with attitude, emotional arousal and behavioural intentions. Finally, the indirect effect of presence on behavioural intentions was supported (0.549, $t = 10.465$, $p < 0.001$).

Table 8.7 Significance Testing Results of the Total Indirect Effects

Indirect Paths	**Total Indirect Effects**	***t* Values**	***p* Values**	**Significance ($p < 0.05$)?**
Interactivity > Attitude*	0.196	3.976	0.000	Yes
Interactivity > Behavioural Intentions*	0.168	3.872	0.000	Yes
Interactivity > Emotional Arousal*	0.196	3.897	0.000	Yes
Layout Design > Attitude	0.028	0.501	0.617	No
Layout Design > Behavioural Intentions	0.024	0.495	0. 621	No
Layout Design > Emotional Arousal	0.028	0.5	0.617	No
Presence > Behavioural Intentions*	0.549	10.465	0.000	Yes
Social Presence > Attitude**	0.069	1.761	0.078	No
Social Presence > Behavioural Intentions**	0.06	1.770	0.077	No
Social Presence > Emotional Arousal**	0.07	1.778	0.075	No
Usability > Attitude	0.058	1.212	0.226	No
Usability > Behavioural Intentions	0.05	1.207	0.228	No
Usability > Emotional Arousal	0.058	1.212	0.226	No
Virtual Aesthetics > Attitude*	0.169	2.115	0.034	Yes
Virtual Aesthetics > Behavioural Intentions*	0.146	2.068	0.039	Yes
Virtual Aesthetics > Emotional Arousal*	0.170	2.105	0.035	Yes
Virtual Atmospherics > Attitude	0.039	0.690	0.490	No
Virtual Atmospherics > Behavioural Intentions	0.039	0.681	0.496	No
Virtual Atmospherics > Emotional Arousal	0.046	0.685	0.494	No

**Statistically significant*

***Slightly below the recommended significance level*

(Source: Authors own)

The specific indirect effects between the constructs were then observed. As it can be seen from Table ***8.8***, the relationship between interactivity and attitude through presence (0.196, t = 3.967, p < 0.001) and interactivity and emotional arousal through presence (0.196, t = 3.897, p < 0.001) were supported. Additionally, the indirect effect of interactivity on behavioural intentions through presence and emotional arousal (0.076, t = 2.725, p < 0.01) and presence and attitude (0.092, t = 2.964, p < 0.01) were statistically significant. Overall, these findings supported the inclusion of these constructs in the S-O-R model by confirming the relationship of interactivity (S) on behavioural intentions (R) through presence and emotional arousal/attitude (O).

Additionally, the results indicated an indirect effect of virtual aesthetics on emotional arousal through presence (0.17, t = 2.105, p < 0.01) and on attitude through presence (0.169, t = 2.115, p < 0.05). However, the overall relationship between virtual aesthetics and behavioural intentions through presence and emotional arousal (0.066, t = 1.704, p < 0.1) and presence and attitude (0.08, t = 1.948, p < 0.1) were slightly below the recommended significance level. Similar results were found for the relationship between social presence and behavioural intentions through presence and emotional arousal (0.027, t = 1.533, p < 0.5) and presence and attitude (0.033, t = 1.671, p < 0.1). Hence, the indirect relationship between social presence and emotional arousal through presence (0.07, t = 1.778, p < 0.1) and attitude through presence (0.069, t = 1.761, p < 0.1) were also slightly below the recommended significance level. However, compared with the other three VR retail environment constructs (virtual atmospherics, layout design and usability), interactivity, virtual aesthetics and social presence demonstrated the most significant indirect effect on attitude, emotional arousal and behavioural intentions overall. Finally, the results further indicated that presence has an indirect effect on behavioural intentions through attitude (0.3, t = 5.083, p < 0.001) and emotional arousal (0.249, t = 3.303, $p \leq 0.001$), which supported that the sense of presence influences behavioural intentions through both affective/cognitive states.

Table 8.8 Significance Testing Results of the Specific Indirect Effects

Path	Specific Indirect Effects	t Values	p Values	Significance (p < 0.05)?
Interactivity > Presence > Attitude	0.196	3.967	0.000	Yes
Interactivity > Presence > Attitude > Behavioural Intentions	0.092	2.964	0.003	Yes
Interactivity > Presence > Emotional Arousal	0.196	3.897	0.000	Yes
Interactivity > Presence > Emotional Arousal > Behavioural Intentions	0.076	2.725	0.006	Yes
Layout Design > Presence > Attitude	0.028	0.501	0.617	No
Layout Design > Presence > Attitude > Behavioural Intentions	0.013	0.492	0.623	No
Layout Design > Presence > Emotional Arousal	0.028	0.5	0.617	No
Layout Design > Presence > Emotional Arousal > Behavioural Intentions	0.011	0.469	0.639	No
Presence > Attitude > Behavioural Intentions	0.3	5.083	0.000	Yes
Presence > Emotional Arousal > Behavioural Intentions	0.249	3.303	0.001	Yes
Social Presence > Presence > Attitude	0.069	1.761	0.078	No
Social Presence > Presence > Attitude > Behavioural Intentions	0.033	1.671	0.095	No
Social Presence > Presence > Emotional Arousal	0.07	1.778	0.075	No
Social Presence > Presence > Emotional Arousal > Behavioural Intentions	0.027	1.533	0.125	No
Usability > Presence > Attitude	0.058	1.212	0.226	No
Usability > Presence > Attitude > Behavioural Intentions	0.027	1.187	0.235	No
Usability > Presence > Emotional Arousal	0.058	1.212	0.226	No
Usability > Presence > Emotional Arousal > Behavioural Intentions	0.023	1.06	0.289	No
Virtual Aesthetics > Presence > Attitude	0.169	2.115	0.034	Yes

Virtual Aesthetics > Presence > Attitude > Behavioural Intentions	0.08	1.948	0.052	No
Virtual Aesthetics > Presence > Emotional Arousal	0.17	2.105	0.035	Yes
Virtual Aesthetics > Presence > Emotional Arousal > Behavioural Intentions	0.066	1.704	0.089	No
Virtual Atmospherics > Presence > Attitude	0.046	0.69	0.49	No
Virtual Atmospherics > Presence > Attitude > Behavioural Intentions	0.022	0.678	0.498	No
Virtual Atmospherics > Presence > Emotional Arousal	0.046	0.685	0.494	No
Virtual Atmospherics > Presence > Emotional Arousal > Behavioural Intentions	0.018	0.633	0.527	No

**Statistically significant*

***Slightly below the recommended significance level*

(Source: Authors own)

8.2.3.1.3 Coefficients of Determination (R_2 Value)

The most commonly used measure to evaluate the structural model is the coefficient of determination, R_2, which represents the amount of variance in the endogenous constructs explained by all the exogenous constructs linked to it (Hair et al., 2017; Wong, 2013) (the extent to which attitude explains behavioural intentions). The coefficient of determination, *(R_2)* were revealed during the PLS algorithm performed above. For the endogenous latent variable, behavioural intentions, the coefficient of determination *(R_2)* was 0.674. Given that higher levels (i.e. closer to 1) indicate high levels of predictive accuracy (Hair et al., 2017), it could be concluded that the two latent variables (emotional arousal and attitude) moderately explain 67.4% of the variance in behavioural intentions. Together, virtual atmospherics, virtual aesthetics, interactivity, social presence, layout design and usability moderately explain 51.1% of the variance of presence (R_2 = 0.511). The coefficient of determination *(R_2)* for attitude was 0.406 and 0.409 for emotional arousal, meaning that

presence moderately explains 40.6% of the variance in attitude and 40.9% of the variance in emotional arousal.

8.2.3.1.4 Effect Size (f_2)

The f_2 value indicates the extent to which a predictor construct contributes to the R_2 value of a target construct in the structural model (Hair et al., 2017). In terms of assessing the f_2, values above 0.02, 0.15 and 0.35 represent small, medium and large effects, respectively (Cohen, 1988). Accordingly, the results indicated that presence has a large effect on both attitude (f_2 = 0.683) and emotional arousal (f_2 = 0.692) and emotional arousal (f_2 = 0.15) and attitude (f_2 = 0.219) have a medium effect on behavioural intentions. Finally, interactivity (f_2 = 0.088) and virtual aesthetics (f_2 = 0.044) represent a small effect on presence. However, the results indicated that social presence (f_2 = 0.012), virtual atmospherics (f_2 = 0.004), layout design (f_2 = 0.002) and usability (f_2 = 0.012) represent an insignificant effect on presence. These findings imply that social presence, virtual atmospherics, layout design and usability do not have a meaningful effect on presence.

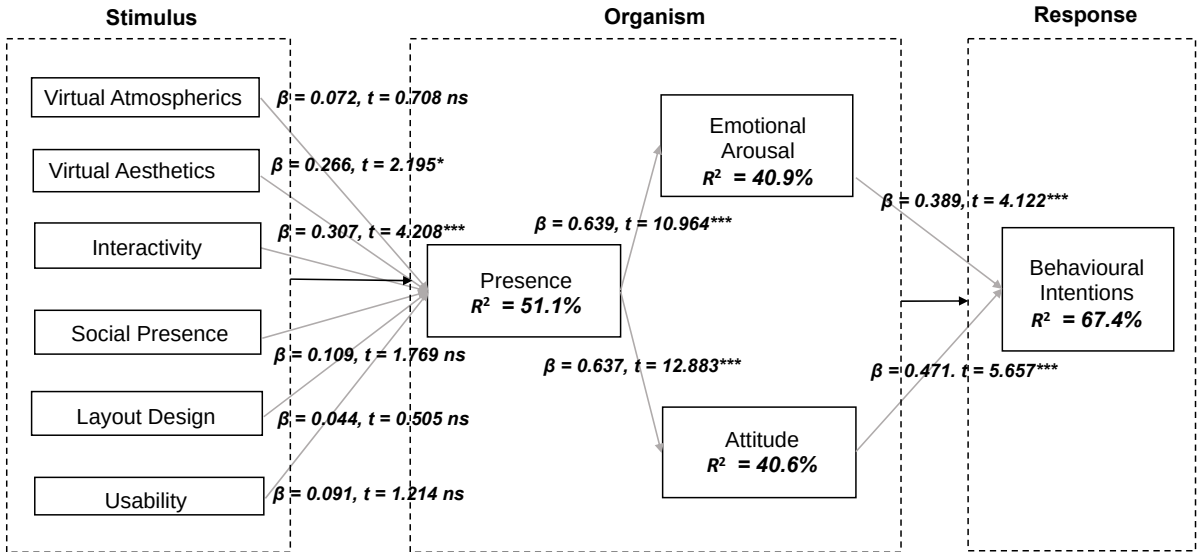
8.2.3.1.5 Predictive Relevance (Q_2)

In addition to evaluating the R_2 value as a criterion of predictive accuracy, evaluating Stone-Geisser's Q_2 value (Geisser, 1974; Stone, 1974) is also recommended, which is an indicator of the model's predictive relevance (Hair et al., 2017). The predictive relevance refers to when a PLS path model accurately predicts data not used in the model estimation (Hair et al., 2017). Accordingly, Q_2 values above zero for a specific endogenous latent variable indicate the path model's predictive relevance for a particular dependent construct and more specifically, this can be categorised as small (Q_2 = < 0.02), medium (Q_2 = 0.15) and large (Q_2 = 0.35) predictive relevance (Hair et al., 2017). The Q_2 values were obtained by using the blindfolding procedure and in this study, it was revealed that the exogenous constructs have a large predictive relevance on the endogenous construct behavioural intentions (Q_2 = 0.480). For attitude (Q_2 = 0.317), emotional arousal (Q_2 = 0.324), and presence (Q_2 = 0.286), the exogenous constructs have a medium predictive relevance.

8.2.3.1.6 Structural Model Consisting of 10 Constructs

As shown in Figure ***8.1***, six out of ten hypothesised relationships exhibit statistical significance. Figure ***8.1*** shows the model with all the path coefficients and the significance for each of them. Based on the analyses, it can be concluded that two out of six constructs strongly explain presence including virtual aesthetics and interactivity. These relationships supported H2 and H3, respectively. The results also confirmed that the influence of interactivity on presence was greater than that of virtual aesthetics, which indicated that interactive functions in VR retail/urban place applications is considered the most important VR retail environmental stimulus out of the six stimuli evaluated in this study. The results showed that virtual atmospherics, layout design and usability did not influence presence directly, which meant that H1, H5 and H6 were not supported by the survey data. Although the values for social presence were slightly below the recommended significance levels, they are higher than the values for virtual atmospherics, layout design and usability. Therefore, at this stage H4 was not supported, however, with the removal of the three VR retail environmental constructs, it was anticipated that the values for social presence would increase. Finally, as expected, attitude and emotional arousal explained the independent variable, behavioural intentions, which provided support for H9 and H10, respectively.

Figure 8.1 Structural S-O-R Model with Empirical Results



ns = not significant, *= $p < 0.05$; **= $p < 0.01$; ***= $p < 0.001$, $\beta < 0.1$. *(Source: Authors own)*

8.2.3.2 Reducing Constructs in the Structural Model

Based on the above analysis, three constructs were removed from the structural model including virtual atmospherics, layout design and usability and the analysis was conducted again. First, the PLS algorithm was performed in order to determine the path coefficients. Then, bootstrapping procedure was performed in order to re-test the hypotheses/path coefficients within the reduced model. The following subsections report the coefficient of determination (R_2), effect sizes (f_2) and predictive relevance (Q_2) before presenting and discussing the final structural model.

8.2.3.2.1 Reduced Structural Model Path Coefficients

Bootstrapping with 5,000 subsamples was performed. Looking at Table ***8.9*** below, it can be seen that similar to earlier results, the inner model suggested that interactivity (β = 0.364, *t* value = 4.942, $p < 0.001$) has the strongest effect on presence, followed by virtual aesthetics (β = 0.332, *t* value = 3.948, $p < 0.001$) and social presence (β = 0.138, *t* value = 2.333, $p < 0.05$). Although the relationship between social presence and presence were slightly below the acceptable significance level in the initial model analysis, this construct remained in the structural model and the *t*-statistics improved as expected after removal of virtual atmospherics, layout design and usability (see Table ***8.9***). The hypothesised path relationship between all constructs are statistically significant (> 0.1), which supports that that interactivity, virtual aesthetics and social presence are moderately strong predictors of presence. Additionally, the path coefficients of the inner model between all constructs are significant as the *t*-statistics are above 1.96 as indicated in Table ***8.9*** below.

Table 8.9 Significance Testing Results of the Structural Model Path Coefficients

Path	Path Coefficients (β)	*t* Values	*p* Values	Significance (*p* < 0.05)?
Virtual aesthetics > Presence	0.332	3.948	0.000	Yes
Interactivity > Presence	0.364	4.942	0.000	Yes
Social Presence > Presence	0.138	2.333	0.020	Yes
Presence > Attitude	0.637	13.127	0.000	Yes
Presence > Emotional arousal	0.639	11.194	0.000	Yes
Attitude > Behavioural intentions	0.471	5.661	0.000	Yes
Emotional arousal > Behavioural intentions	0.389	4.141	0.000	Yes

(Source: Authors own)

The total indirect effects among the constructs were also observed and are presented in Table ***8.10*** below. The findings suggested that the indirect effects between all of the constructs are statistically significant ($p < 0.05$), indicating that virtual aesthetics, interactivity and social presence have an indirect effect on behavioural intentions through presence and emotional arousal/attitude. Accordingly, of the three VR retail environment cues, interactivity exhibits the strongest indirect effect on attitude (0.232, *t* value = 4.582, $p < 0.001$), emotional arousal (0.233, *t* value = 4.616, $p < 0.001$) and behavioural intentions (0.2, *t* value = 4.51, $p < 0.001$). This is followed by virtual aesthetics, which demonstrated a stronger indirect effect on emotional arousal (0.212, *t* value = 3.418, $p \leq 0.001$), followed by attitude (0.211, *t* value = 3.443, $p \leq 0.001$) and then behavioural intentions (0.182, *t* value = 3.303, $p \leq 0.001$). Finally, social presence had a similar indirect effect on attitude (0.088, *t* value = 2.292, $p < 0.05$) and emotional arousal (0.088, *t* value = 2.327, $p < 0.05$) followed by behavioural intentions (0.076, *t* value = 2.311, $p < 0.05$).

Table 8.10 Significance Testing Results of the Total Indirect Effects

	Total Indirect Effect	t Values	p Values	Significance (p < 0.05)?
Interactivity > Attitude	0.232	4.582	0.000	Yes
Interactivity > Behavioural Intentions	0.2	4.51	0.000	Yes
Interactivity > Emotional Arousal	0.233	4.616	0.000	Yes
Presence > Behavioural Intentions	0.549	10.671	0.000	Yes
Social Presence > Attitude	0.088	2.292	0.022	Yes
Social Presence > Behavioural Intentions	0.076	2.311	0.021	Yes
Social Presence > Emotional Arousal	0.088	2.327	0.02	Yes
Virtual Aesthetics > Attitude	0.211	3.443	0.001	Yes
Virtual Aesthetics > Behavioural Intentions	0.182	3.303	0.001	Yes
Virtual Aesthetics > Emotional Arousal	0.212	3.418	0.001	Yes

(Source: Authors own)

Next, the specific indirect effects were observed. As it can be seen from Table ***8.11*** the majority of the indirect effects among constructs exhibit statistical significance, therefore supporting the overall model. The only exception is related to social presence where the indirect relationship between social presence and behavioural intentions through presence and emotional arousal (0.034, *t* value = 1.851, $p > 0.05$) is slightly above the recommended significance level ($p < 0.05$). However, this figure is only 0.02 above the recommended significance level, therefore, the construct remained in the model for this study. However, these findings should be taken as exploratory and further research would be required to further support this relationship. Overall, these findings supported that the three VR retail environment cues (interactivity, virtual aesthetics and social presence) positively influence behavioural intentions indirectly through presence and emotional arousal/attitude.

Table 8.11 Significance Testing Results of the Specific Indirect Effects

	Specific Indirect Effects	***t* Values**	***p* Values**	**Significance ($p < 0.05$)?**
Interactivity > Presence > Attitude	0.232	4.582	0.000	Yes
Social Presence > Presence >Attitude	0.088	2.292	0.022	Yes
Virtual Aesthetics > Presence > Attitude	0.211	3.443	0.001	Yes
Interactivity > Presence > Attitude > Behavioural Intentions	0.109	3.255	0.001	Yes
Social Presence > Presence > Attitude > Behavioural Intentions	0.041	2.142	0.032	Yes
Virtual Aesthetics > Presence > Attitude > Behavioural Intentions	0.1	2.927	0.003	Yes
Presence > Attitude > Behavioural Intentions	0.3	5.089	0.000	Yes
Interactivity > Presence > Emotional Arousal > Behavioural Intentions	0.091	2.915	0.004	Yes
Social Presence > Presence > Emotional Arousal > Behavioural Intentions	*0.034*	*1.851*	*0.064*	*No*
Virtual Aesthetics > Presence > Emotional Arousal > Behavioural Intentions	0.083	2.318	0.02	Yes
Presence > Emotional Arousal > Behavioural Intentions	0.249	3.348	0.001	Yes
Interactivity > Presence > Emotional Arousal	0.233	4.616	0.000	Yes
Social Presence > Presence > Emotional Arousal	0.088	2.327	0.02	Yes
Virtual Aesthetics > Presence > Emotional Arousal	0.212	3.418	0.001	Yes

(Source: Authors own)

8.2.3.2.2 Coefficients of Determination (R_2 Value)

For the endogenous latent variable behavioural intentions, the R_2 remained the same (R_2 = 67.4%). For presence, the coefficient of determination (R_2) slightly increased from the previous model (R_2 = 59.8%), meaning that virtual aesthetics, interactivity and social presence moderately explain presence. Similarly, for the remaining variables including attitude (R_2 = 49.2%) and emotional arousal (R_2 = 48.9%), the coefficient of determination slightly increased compared with the previous model. Both the latter figures are closer to 50% (medium effect) than 25% (weak effect), therefore, it could be concluded that presence moderately explains both constructs within the structural model.

8.2.3.2.3 Effect Size (f_2)

The results from running the PLS algorithm and obtaining the effect size (f_2) demonstrated the same results as before given that presence has a large effect on both attitude (f_2 = 0.683) and emotional arousal (f_2 = 0.692) and emotional arousal (f_2 = 0.15) and attitude (f_2 = 0.219) have a medium effect on behavioural intentions. However, interactivity (f_2 = 0.088) and virtual aesthetics (f_2 = 0.144) represent a medium effect on presence, which is an increase compared with previous results were these effects were small. Additionally, in the previous analysis, social presence had limited effect on presence (f_2 = 0.012), however, this figure has increased (f_2 = 0.031) but is still slightly below the significance value, which indicated a weak relationship between social presence and presence.

8.2.3.2.4 Predictive Relevance (Q_2)

Employing the blindfolding procedure, the findings indicated that the Q_2 only changed slightly from the previous analysis. Accordingly, the exogenous constructs have the same, large predictive relevance on the endogenous construct behavioural intentions (Q_2 = 0.480). Virtual aesthetics, interactivity and social presence have a medium predictive relevance on presence (Q_2 = 0.282). Similarly, the exogenous construct, presence, has a medium predictive relevance on attitude (Q_2 = 0.317) and emotional arousal (Q_2 = 0.325).

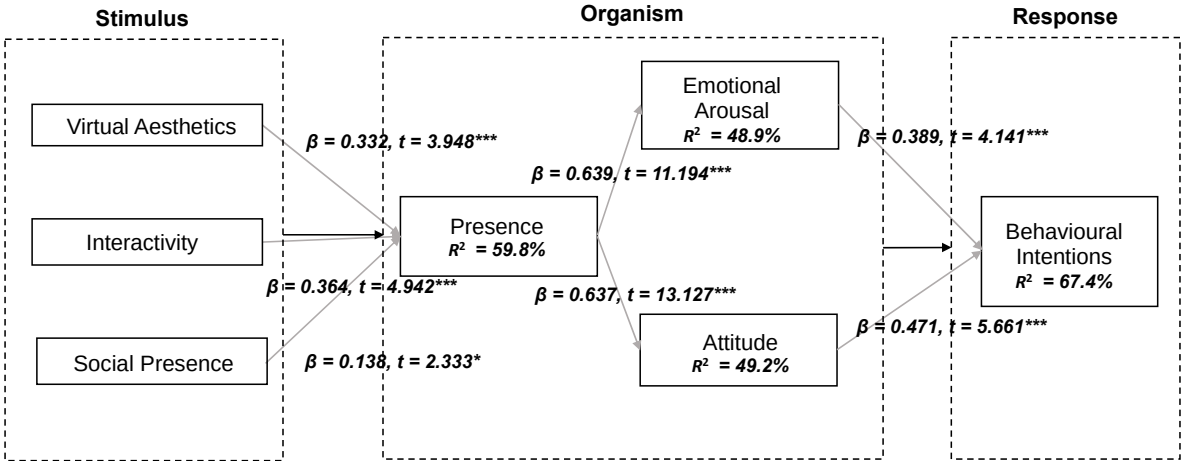
8.2.3.2.5 Final Structural Model

Figure **8.2** portrays the final structural model after removal of three constructs and portrays the results obtained from running the analysis again with seven constructs in the

structural model. As it can be seen, all relationships between the constructs are significant. More specifically, the three VR retail atmospheric variables (i.e. stimulus) including virtual aesthetics, interactivity, and social presence exhibit a direct positive influence on presence (organism). Presence has a direct positive influence on attitude and emotional arousal (i.e. organisms), and emotional arousal and attitude have a direct positive effect on behavioural intentions (i.e. response).

Further, as outlined above, the findings demonstrated an indirect relationship among all constructs, which further supported the influence of the three VR retail environmental constructs on emotional arousal, attitude and behavioural intentions and also the indirect relationship between presence and behavioural intentions. These findings supported the proposed model integrating presence and emotional arousal/attitude as organisms with the adapted S-O-R model. Overall, the findings supported the relationships between virtual aesthetics, interactivity, social presence, presence, emotional arousal, attitude and behavioural intentions and their inclusion in the adapted S-O-R model.

Figure 8.2 Final Structural S-O-R Model with Empirical Results



*= p<0.05; **= p<0.01; ***= p<0.001, β < 0.1.

(Source: Authors own)

8.3 Summary

The purpose of this chapter was to present the analysis of the quantitative results from the survey conducted with potential visitors to urban shopping destinations. PLS-SEM was employed in order to validate the VR Visitor Behaviour S-O-R Model proposed from the qualitative findings. Accordingly, PLS-SEM verified seven out of ten relationships in the final structural model analysis, thus providing support for seven out of ten hypotheses. More specifically, the adapted S-O-R model indicated the relationships between virtual aesthetics, interactivity, social presence (stimuli), presence, emotional arousal, attitude (organisms) and behavioural intentions (response). This means that the virtual aesthetics, interactivity and social presence elements within VR retail applications should be designed to stimulate a high level of presence, given that presence directly influences emotional arousal and attitude, which then directly influences positive behavioural intentions. The following section presents a more thorough discussion focusing on the primary and secondary data synthesis and highlights the new findings that have emerged from the primary data collection, particularly in respect to the proposed model.

Chapter 9 – Discussion

9.1 Introduction

The aim of this chapter is to present the primary and secondary data synthesis and present the new findings that have emerged from the primary data collection, particularly with regards to the proposed VR Visitor Behaviour S-O-R model. Therefore, the findings from the industry interviews and visitor interviews will be synthesised with the survey findings and prior literature in order to provide justifications for the final VR Visitor Behaviour S-O-R Model proposed in the context of urban shopping destinations. First, the key findings are presented in accordance to the main constructs of the proposed model and each subsection discusses the results of the proposed hypotheses. More specifically, the discussion begins with presenting the relationships between the six VR retail environment constructs and presence before moving on to discuss the role of presence and emotional arousal/attitude within the proposed model. The final discussion focuses on the relationship between emotional arousal/attitude and behavioural intentions and behavioural intentions and the VR retail environment cues and presence.

9.2 Key Findings

Employing the S-O-R theory, this study examined potential visitors' responses and behavioural intentions towards VR retail environments in the urban shopping destination context. Accordingly, a theoretical model was developed and tested for the relationships among VR retail environment cues (stimulus), presence, emotional arousal and attitude (organisms) and behavioural intentions (response) using the S-O-R paradigm. PLS-SEM verified several constructs, paths, and hypotheses and the key findings of this study are as outlined below.

First, three (virtual aesthetics, interactivity and social presence) out of the six proposed VR retail environment constructs were found to positively influence presence. Presence was found to positively influence emotional arousal/attitude and emotional arousal/attitude was found to positively influence potential visitors' behavioural intentions. These findings demonstrated support for seven out of ten hypotheses (H2, H3, H4, H7,

H8, H9 and H10). More specifically, these findings indicated the importance of integrating effective virtual aesthetics, interactive functions and elements of social presence to increase presence. In turn, this could positively influence potential visitors' attitude and stimulate emotional arousal, which could potentially lead to positive behavioural intentions including 1) the intent to recommend, 2) intent to purchase and 3) intent to use VR again. However, the findings did not provide support for intent to visit the places featured in VR.

Second, contrary to the qualitative findings, the quantitative results did not support three hypotheses including those that indicated a positive relationship between presence and three VR retail environment constructs namely, virtual atmospherics (H1), layout design (H5) and usability (H6). The qualitative findings could potentially explain both the supported and contradictory results, therefore, the findings are drawn upon throughout this section in order to inform the discussion and synthesise the findings with previous literature.

Third, this study proposed the inclusion of presence as an organism component within the adapted S-O-R model for a number of reasons, which are discussed in more detail in this chapter.

Fourth, the observations of the indirect relationships supported the overall proposed final VR Visitor Behaviour S-O-R Model consisting of seven constructs, thus supporting that interactivity, virtual aesthetics and social presence influence behavioural intentions indirectly through presence and emotional arousal/attitude.

9.2.1 VR Retail Environment Cues (Stimulus) and Presence

Before discussing the relationship between the stimuli and presence, the justification for including presence as an organism component of the adapted S-O-R model is presented. Firstly, during the visitor interviews the majority of participants compared the two VR retail applications largely in terms of the sense of presence they did or did not generate. For example, participants expressed increased preference towards Application A because it provided more realistic insights into the urban shopping destination by utilising real imagery and accompanying music (i.e. virtual aesthetics/virtual atmospherics). By doing so, the overall experience was perceived as more realistic and participants could fully immerse in the virtual world and detach from reality. Additionally, the model asserts that

presence influences emotional arousal/attitude. This is because during the visitor interviews, participants expressed specific emotions and attitudes related to each of the VR retail applications, depending on the extent to which they experienced presence (e.g. virtual atmospherics in Application A increased presence, therefore increasing emotional arousal). Therefore, presence was included as one of three organism components, however, it is prior to emotional arousal/attitude and its indirect effect on behavioural intentions was supported by the quantitative analysis. The order of the constructs is further justified throughout this discussion.

Evidence from the visitor interviews were comparable with findings from previous tourism studies indicating that stimulating a combination of virtual atmospheric cues, including visual aspects and audio cues, in VR leads to a high level of presence (Jung et al., 2017; Martins et al., 2017; Gutierrez et al., 2008). Although these findings are also in accordance with recent VR retailing research (Schnack et al., 2018), these findings cannot be generalised given that the hypothesised relationship between virtual atmospherics and presence (H1) was not supported by the quantitative data analysis. This finding was unexpected given that similar to physical stores, atmospheric cues play a substantial role in virtual contexts (Vrechopoulos et al., 2004). Researchers have also demonstrated the relationship between presence and specific atmospheric cues in the VR context (Schnack et al., 2018; Jung et al., 2017; Tussyadiah et al., 2016; Larsson et al., 2010; Gutierrez et al., 2008). Some insights from the qualitative findings could potentially explain this contradictory result, however, to understand the insignificant relationship between virtual atmospherics and presence, the results of virtual atmospherics as a whole are discussed.

First, a number of visitor interview participants reported that natural sounds would make the experience more realistic, which is supported by prior tourism research indicating that more vivid sounds increase presence (Jung et al., 2017; Tussyadiah et al., 2016). Recent findings from Schnack et al., (2018) compared well with these findings providing further evidence that a richer audible environment positively affects the perceived level of immersion in virtual store environments. Second, in support of prior research (Thomas and Carey, 2005; Tooke and Baker, 1996; Sussman and Vanhagen, 2000), the visitor

interviews also indicated that implementing destination information through sound could provoke interest in the urban shopping destination and enable potential visitors to make more informed decisions and initiate travel arrangements. More specifically, combining aesthetically pleasing visual cues with relevant natural sounds and a commentary providing potential visitors with destination information was suggested to improve potential visitors' knowledge acquisition of the urban shopping destination being viewed.

Although these qualitative findings indicated that virtual atmospherics would positively affect presence, the relationship between presence and virtual atmospherics was not supported by the quantitative analysis and this could be explained by a number of reasons. First, the VR applications used in the data collection consisted of limited specific elements that were perceived important in VR retail applications such as interactive features and social presence. Therefore, it could be assumed that by implementing these elements the virtual atmospherics would appear more exciting and attractive. In support of this, Siegrist et al., (2019) argued that the degree of experienced immersion depends on the fidelity with which the virtual environment is represented, particularly how closely the reaction of the VR system mimics the reaction of a real environment. Therefore, the atmospherics in Application C might not have been perceived as comparable to the real world given that other important retail environment cues (e.g. interactivity and social presence) were limited. In support of this, Siegrist et al., (2019) argued that the number of sensory feedbacks provided by the VR system (visual, auditory, and haptic) is a key factor affecting the degree of immersion.

Therefore, given that visitor interview participants demonstrated interest in a more sensory experience, the lack of sensory feedback (other than sound and visual) could explain the reason virtual atmospherics did not have an effect on presence, and asserts the need for stimulating more senses when developing future VR retail applications in the context of this study. In support of this, prior tourism research has indicated that engaging additional senses in VR is becoming increasingly paramount (Martins et al., 2017; Gallace et al., 2012), while these findings provide contextual evidence to urban shopping destinations. The contextual difference is important given that recent studies using immersive technologies have found that context influences participants sensory

evaluations (Bangcuyo et al., 2015; Kim, Lee, and Kim, 2016). Furthermore, as suggested by Martinez-Navarro et al., (2019) and Nichols et al., (2000), the high level of cognitive engagement provoked by the virtual experience could have discouraged people from paying attention to specific stimuli.

Moreover, the presence of visual cues leading to increased presence has been confirmed (e.g. Schnack et al., 2018), however, few studies have focused on the construct of virtual aesthetics in VR. In this study, the hypothesised positive relationship between virtual aesthetics and presence (H2) was supported by the survey data, which contributed a new finding to the literature. More specifically, the visitor interviews indicated that realistic aesthetic cues increased presence and is more preferred for VR retail applications particularly in the urban shopping destination context. Application C allowed participants to tailor the aesthetic cues (i.e. choice of city backdrop and store colour), which meant that each participant could create a personalised environment that suits their preferences. The ability to tailor the virtual aesthetic design meant that participants could create an environment that appeals more to them and could therefore influence interest (Tussyadiah et al., 2016), fascination, positive attitudes and emotional arousal. This is similar to Rose et al., (2012), who found that customisation of a website has been found to influence affective experiential state, build a sense of perceived control, and enhance the overall shopping experience. These findings further assert that allowing users to customise virtual shopping environments could influence positive emotions and could potentially be an important feature in the aesthetic design of VR retail applications.

Similar to prior research (Loureiro et al., 2019; van Kerrebroeck et al., 2017; Li and Meshkova, 2013), the visitor interviews suggested that VR generated higher perceptions of presence than regular 2D videos (e.g. on TV), which indicated VR's potential in the urban place marketing context. Some visitor participants reported that elements of Application B were not realistic and therefore influenced the extent to which they felt present in the virtual environment while others reported that both applications had low graphics, which had the same effect on presence. This negative visual experience might have interfered with the visual realism of products (Schnack et al., 2018) and therefore affected the perception of quality and meant that participants were not impressed by the

virtual environment. Visitor participants suggested that improved graphics would increase presence, which is supported by Lee and Kim (2008) who further found that increasing the resolution of video images leads to enhanced visual realism. This study contributed suggestions for additional content derived from the visitor interviews including insights into the entire city offerings such as traditional/local markets and transport links, which offers important considerations for future VR developments in the urban place marketing sphere.

Moreover, interactivity has been considered an antecedent of telepresence (Klein, 2003; Coyle and Thorson, 2001; Steuer, 1992) and in this study, interactivity was considered a key requirement for VR retail applications as indicated in the visitor interview findings and its influence on presence was later confirmed by the survey results (H3). These findings are in line with prior VR research (e.g. Hudson et al., 2019) specifically in the retail context (e.g. Schnack et al., 2018), indicating that interactivity within VR environments show a tendency to increase perceived presence and also prior e-commerce research (e.g. Vonkeman et al., 2017; Fiore et al., 2005; Klein, 2003; Coyle and Thorson, 2001), which has demonstrated the positive influence of interactivity on presence. In this study, the interactive functions that would satisfy user requirements and enhance presence included the ability to interact with and customise content in the virtual retail environment, such as closely inspecting products, browsing through a range of products, accessing product information (e.g. price) and modifying the virtual retail environment (e.g. store colour and city as backdrop). The ability to closely inspect products is important given that direct product experience is considered the best way for consumers to evaluate products (Hyun and O'Keefe, 2012; Klein, 2003) with the convenience of checking items irrespective of their location (Farah et al., 2019).

According to the visitor interviews, a high degree of interactivity with realistic products and the VR environment in general could also make the experience more comparable to shopping in the real world and enable potential visitors to get information tailored to their specific needs. Similarly, prior e-commerce research has indicated that presence is dependent on how closely the computer-mediated experience stimulated consumers' real-world interaction with a product (i.e. person-to-product interaction) (Sheridan, 1992,

Shih, 1998; Coyle and Thorson, 2001; Klein, 2003; Fiore et al., 2005). According to Vonkeman et al., (2017), the more interactive the product presentation is perceived to be, the more consumers are likely to experience a perceptual illusion of the product being physically *there* with them and the same was confirmed in this study. More specifically, this study's findings indicated that increased interactivity could facilitate more confident purchasing decisions on product selection or places to visit and enable potential visitors to accomplish their shopping task. More recently, Schnack et al., (2018) found that immersive VR increases users' ability to closely examine products in a VR store compared with a desktop-based virtual simulated store and the ability to pick up and inspect products influences decision-making. Overall, previous literature (Schnack et al., 2018; Siegrist et al., 2019) supported that realistic shopping environments are an important element of influencing similar behaviour as in the real world.

However, during the visitor interviews this study revealed that integrating interactive capabilities in VR retail applications could potentially create more of a barrier to mass consumer adoption if advanced technical equipment is required to facilitate the interaction, which offers new findings to the literature. Hence, although interactivity is suggested to be an important function in VR retail applications, it should remain fairly easy to use with limited equipment required in order to make the technology accessible to the majority consumer market and encourage adoption in the first instance. Indeed, studies have argued that VR is already becoming more accessible to the consumer market with the availability of affordable VR headsets, which asserts that the use of immersive technologies will likely become more widespread in the near future (Pizzi et al., 2019). Given the importance of interactivity in generating a sense of presence in VR retail applications, it is suggested that a selection of those functions highlighted above should be a priority when developing such applications. However, during the industry interviews this study found that the ability to develop advanced VR applications is dependent on the costs associated with VR hardware and software developments, and whether the involved organisations perceive the ROI to outweigh the costs associated with development and implementation of such VR retail applications.

Furthermore, the literature chapter discussed how cities often serve as places for consumers' social relationships and provide people feelings of community, security and safety, and similarly, many people enter virtual places in order to feel socially connected in some manner (Rosenbaum et al., 2017; Line et al., 2015). As other people are often present in various retail environments, it seemed logical that the visitor interviews indicated that generating more of a social atmosphere would increase presence, and as expected, this hypothesis (H4) was supported by the survey data, which contributed another new finding to the literature. Indeed, the visitor interviews indicated an overall preference of Application A because it had increased social presence than Application B, which seemed logical given that shopping has always been regarded a social activity (Lu et al., 2016). In the tourism literature, Tussyadiah et al., (2016) indicated that social elements are important yet limited in many VR experiences, which was also supported in this study given that there were limited interactive VR retail applications integrating social elements available to the consumer market during the time of data collection.

Nevertheless, prior VR studies in tourism (e.g. Tussyadiah et al., 2016), retail (e.g. van Kerrebroeck et al., 2017a) and web marketing (e.g. Coyle and Thorson, 2001) literature have indicated that VR applications that facilitate interaction and communication could make the experience more realistic and this study builds on these findings. More specifically, this study extends these findings by specifically focusing on the concept of social presence and empirically investigated its relationship with presence in the VR retail context therefore contributing new findings to the literature. In support of this, the visitor interviews indicated preferences towards social elements including the ability to interact with others at the urban shopping destination such as shop assistants and/or friends and family in the form of virtual avatars in order to generate a more personal, warm and sociable environment for shopping. Given that customers develop their sense of relationship with the retailer through identification with others, these findings emphasised that customer-to-customer interaction must be recognised and encouraged in virtual retailing and should be viewed as the equivalent of shoppers talking and exchanging thoughts and ideas in a traditional setting (Rose et al., 2012).

In support of this, urban place marketing research has indicated that a consumer's perceived relationship with the place and other people within it influences the images formed (Hart et al., 2013). Accordingly, positive images formed could lead to positive outcomes such as increased satisfaction with the experience, increased patronage (Verhoef et al., 2009) and increased familiarity, which could lead to positive WOM and enhanced place reputation (Line et al., 2012; Brown et al., 2005). Additionally, increased assistance in the form of an avatar salesperson could increase user engagement by answering questions, alleviating anxiety and encourage users to engage with the product or promote immersion in the shopping experience (Domina et al., 2012). Although the survey data supported that such social presence would positively affect presence, there was limited social presence in Application C, which meant that survey respondents were basing their evaluations on the lack of social presence thereof.

Nevertheless, basing their perceptions on limited social presence meant that the lack of human and sociable elements where perceived to be an important factor in creating a more realistic shopping environment in VR as one would expect a social atmosphere when shopping. The visitor interviews also indicated that atmospheric cues such as the sounds of an ambient crowd would enhance presence, which asserts the role of social presence in VR retail applications in the urban place context. This is also supported by the substantial research confirming the importance of social dimensions in traditional retailing (Tombs and McColl-Kennedy, 2003; Baron et al., 2009; Rosenbaum and Massiah, 2011; Nilsson and Ballantyne, 2014), online retailing (Ogonowski et al., 2014; Hassanein and Head, 2007) and urban place marketing research (Hart et al., 2013; Haytko and Baker, 2004; Miller and Kean, 1997), which overall indicated that social presence is an important element in both physical and virtual (including VR) retail environments, specifically in the urban place context.

Therefore, integrating elements of social presence such as those outlined above is suggested in the development of future VR retail applications in the urban place context. In support of this, Domina et al., (2012) suggested that retailers should ensure their virtual store environments offer a total consumer experience providing fun experiences with social interfaces. However, given that the presence of other shoppers could influence

consumers and employees cognitive and affective states and therefore their behaviour in retail store environment research (Nilsson and Ballantyne, 2011, 2014; Mari and Pogessi, 2011; Baker and Wakefield, 2011; Baron et al., 2009; Rosenbaum and Massiah, 2011; Baron et al., 2009), future VR research should consider the effects of social presence (e.g. human density, individual's unique characteristics and socioeconomic group, and moods and emotions) on potential visitors behaviour.

Furthermore, several studies highlighted how VR could facilitate navigation and ultimately enhance the overall shopping experience (Glazer et al., 2013). However, this is the first study to empirically investigate layout design as a VR retail environmental cue and determine its relationship with presence, which contributed theoretically to the literature. More specifically, the visitor interviews indicated that effective design of the virtual store layout would facilitate ease of navigation and therefore enable the user to fully detach from reality and become immersed into the virtual world. Those participants who could easily navigate Application B could essentially feel more present in the VR retail environment, and those who had difficulty navigating preferred the passive experience (Application A), which indicated that layout design would have an effect on presence. However, despite being identified as an important factor in the qualitative results, the relationship between layout design and presence (H5) was not supported by the quantitative results, therefore, these initial findings cannot be generalised further than the interview participants.

Nevertheless, the visitor interview results concluded that helpful signage, barriers and footprints lit up on the floor for guidance would facilitate ease of navigation. A more natural mode of transportation (as opposed to teleportation) that better replicated walking through a retail environment such as a town or shopping centre was also suggested to improve the experience. The ability to elicit more naturalistic shopper behaviour could significantly decrease systematic biases in virtual shopper behaviour and lead to more accurate depictions of actual in-store behaviour (Schnack et al., 2018). In support of this, Siegrist et al., (2019) found that people behave realistically in a VR store that allows them to walk around and behave as in the real world more so when they have had the chance to familiarise themselves with the possibilities in this environment. This was confirmed by

participants who reported that improvements with navigation in terms of making it more realistic and comparable to walking around shops in the real world would increase presence and overall perceptions of the organisation of the layout design.

The insignificant relationship between layout design and presence could be explained by a number of reasons. First, the observed lack of significance in the case of layout design in Application C could be explained by the relatively small dimension of the virtual store and the interactive functions to browse and select products, which made it easier in general to conduct the task. Repeating the same experiment in a larger store or broader destination format might lead to participants utilising the full potential of the HMDs search capabilities. Additionally, survey respondents experienced only one interactive VR retail application whereas interview participants were able to compare and contrast between a passive and an interactive VR retail application. Therefore, interview participants were exposed to two different types of possibilities and were able to identify which type of VR retail application they preferred.

According to the visitor interviews, the usability of both the VR hardware and VR retail applications would affect presence. Those participants who experienced difficulty using the VR retail applications and/or awkwardness or discomfort with the VR HMDs were distracted with the usability and therefore did not fully detach from reality. However, consistent with Martinez-Navarro et al., (2019) who found that the perceived discomfort of the virtual environment did not influence on presence, the survey data did not support the hypothesised relationship between usability and presence (H6). The qualitative results offer insights into potential reasons for this insignificant relationship and these findings could provide important considerations for future developments by highlighting the needs and issues faced by potential users, which should be at the centre of the design process (Natarjan et al., 2018).

First, both the visitor and industry interviews indicated that the use of more advanced equipment could potentially create more of a barrier to consumer adoption with regard to affordability, accessibility and usability. These findings align with technology access of the innovative technology itself given that few concerns that were identified in the industry interviews included tourist's device capability, the usability of the AR and VR applications

and access to VR HMDs. Indeed, recent research has argued that VR is now more accessible to the consumer market given that VR HMDs are at consumer-level prices and are mobile-based, meaning that they are ready to use for consumers that already have a mobile device with the capacity to display VR content (Pizzi et al., 2019; Hartl and Berger, 2017; Tussyadiah et al., 2018; van Kerrebroeck et al., 2017a). This indicated that consumer acceptance of these technologies is now required, and although visitor readiness is considered a barrier at this stage, it could be concluded that in the future, visitor readiness could act as a significant adoption driver as with other technological innovations in prior studies (e.g. Zhu et al., 2003). In other words, when potential visitors are ready to use immersive technologies, decision makers will be more willing to transform their organisations so as to reap the benefits of immersive technologies.

Despite these findings, the relationship between usability and presence was not supported by the survey data and this could be explained by a number of reasons associated with Application C, the research process and survey respondents' prior VR usage. During survey data collection, clear instruction was provided to participants and no issues were raised by respondents with regard to difficulty using the VR retail application and/or HMD. Therefore, it was assumed that overall survey respondents perceived the usability of both applications as easy to use and therefore were more confident with using it. During the interviews, participants reported issues with regard to the fast speed of Application A. In comparison, survey respondents were in control of the speed they navigated around Application C, which could have meant that it was more user-friendly and asserts the role of interactivity, ease of navigation and effective layout design. The process of participants trying the VR retail application was intended to be as seamless as possible in order to ensure an efficient survey process. Therefore, the set-up of the VR application was conducted by the researcher for each participant and during this time clear instruction on how to navigate the virtual environment was provided. It could be assumed that participants felt confident using the VR retail application and therefore felt that most people would also learn how to use VR quickly. This limited any issues associated with usability and allowed participants to immerse into the VR retail environment and concentrate on the task at hand. Therefore, it was difficult to determine

whether issues with usability affected presence as indicated in the interview data given that participants did not experience any issues with usability during the survey process.

Overall, the discussion section so far has demonstrated several new findings that have emerged from this study. First, the hypothesised positive relationship between virtual aesthetics and presence (H2) was supported by the survey results and this relationship was discussed more thoroughly by drawing on all elements of the primary data collection.

Second, suggestions for additional content for future VR retail developments in the urban place marketing sphere have been provided as drawn from the visitor interviews.

Third, the hypothesised positive relationship between social presence and presence (H4) was supported by the survey data, which extended prior VR research by confirming this relationship in a specific VR retail context.

Fourth, this is the first study to empirically investigate layout design as a VR retail environmental cue and indicate its relationship with presence, which initially contributed theoretically to the literature. However, as this relationship was not supported by the survey data, it cannot be generalised further than the interview participants and as such, further research is recommended.

Furthermore, although not a new finding within this study, the hypothesised positive relationship between interactivity and presence (H3) was confirmed, which supports prior research. The following subsection provides a more thorough discussion on the direct relationships between presence and emotional arousal/attitude and also the indirect relationships between the VR retail environment cues and emotional arousal/attitude through presence.

9.2.2 Presence, Emotional Arousal and Attitude (Organisms)

In accordance to the proposed model, presence was expected to positively influence emotional arousal (H7) and attitude (H8). The survey results supported the relationship between presence and emotional arousal, thus providing support for H7. Indeed, the relationship between emotions experienced in virtual environments and the sense of presence has been well recognised (Alcañiz, Baños, Botella, and Rey, 2003) and authors have reported the causal influence of emotions on presence (Bouchard, St-Jacques,

Robillard, and Renaud, 2008; Gorini, Capideville, De Leo, Mantovani, and Riva, 2011; Riva et al., 2007). However, researchers have argued that the findings are inconclusive and have been insufficiently tested, which emphasised the need to further examine these effects (Diemer, Alpers, Peperkorn, Shiban, and Mühlberger, 2015; Alcañiz et al., 2003). Recently, Martinez-Navarro et al., (2019) found that emotions experienced in a virtual store impact on the sense of presence, which in turn increases purchase intentions.

Notably, these studies have investigated the influence of emotions of presence (Martinez-Navarro et al., 2019; Gorini et al., 2011; Bouchard et al., 2008; Riva et al., 2007), whereas the current study examined the influence of presence on emotions. This is because the interview results indicated that the ability of the VR retail environment cues in generating a sense of presence determined whether participants could fully immerse in the VR retail environment and experience it as if it were for real and therefore experience varying degrees of emotions. This was supported by the quantitative results indicating an indirect effect of virtual aesthetics, interactivity and social presence on emotional arousal, attitude and behavioural intentions. Drawing on Izard's (1977) Differential Emotions Scale, this study's results indicated that presence evokes affective responses including excitement, amusement and contentment, which are directly connected to intended behaviours. These findings implied the need to design appealing, stimulating virtual retail environments with features capable of generating emotional experiences and positive effect (Martinez-Navarro et al., 2019).

Further, in the e-commerce literature, previous studies have indicated that different aesthetic designs can evoke users' different emotions (Liu et al., 2016; Chang, Chih, Liou, and Hwang, 2014; Wang, Minor, and Wei, 2011). In particular, attractive design can help to evoke users' positive emotions (e.g. excitement) of a website (Liu et al., 2016), while in v-commerce this study found that virtual aesthetics that increase presence could evoke positive emotions such as excitement. The visitor interviews indicated that viewing the urban shopping destination from unique perspectives (e.g. bird's-eye view) is considered a unique aspect of VR that could not only generate interest and amusement in the city but provide a tool for exposure therapy for fear of heights. Additionally, Vonkeman et al., (2017) stated that presence may generate affective responses provided that the products

presented are good quality. This is further supported by the findings in this study indicating an indirect effect of virtual aesthetics on both emotional arousal and attitude. These empirical results can provide evidence on how VR interface designers can improve users' emotional experience by improving the interface aesthetic design and asserts the importance of high-quality virtual aesthetics in the design of VR retail applications.

Moreover, previous literature has indicated that increased interactivity can increase enjoyment with the website (Li et al., 2001) and influence emotional states, which leads to higher levels of impulse buying (Vonkeman et al., 2017; Jiang and Benbasat, 2007). Similarly, in the current research, the ability to interact with elements of the VR retail environment in terms of accessing product information, browsing through various products and exploring the VR retail environment was found to indirectly elicit positive emotional arousal through presence. These findings are also in accordance with Vonkeman et al., (2017), who argued that experiencing a product in a locally present manner resembles actual product trial and is therefore likely to trigger positive affective responses towards the product. These findings provided further evidence that implementing interactive features in VR retail applications could increase the sense of presence experienced by the user, which in turn stimulates emotional arousal and potentially leads to positive behavioural responses.

Additionally, the findings indicated that the ability to interact with friends and family in VR retail environments would increase feelings of relaxation and contentment while experiencing the urban shopping destination in VR. Indeed, conducting chats and gaining product information and recommendations from friends and family is considered a key feature of m-commerce (Huang, 2017; Chen et al., 2011) and prior studies have suggested that VR could provide an easy and affordable way to interact with friends and family around the world (Guttentag, 2010). Therefore, integrating these features into future VR retail applications in the urban place context could improve their effectiveness and increase positive emotions in visitors.

On the contrary, the visitor interviews also indicated that perceptions and preferences of social presence are subjective to each individual given that a high level of perceived social presence could potentially create anxiety in people with social phobias (in crowded town

or shopping centres, for example). This could potentially explain the weaker direct and indirect effects of social presence on the organism and response components within the proposed model when compared with interactivity and virtual aesthetics. Therefore, providing potential visitors with insights into the busyness of town/shopping centres could be useful to avoid crowding, which is particularly relevant for people who experience anxiety due to crowding as indicated by van Kerrebroeck et al (2017a). These findings contributed to the literature by indicating that although social presence is important to stimulate positive emotional arousal, this could be dependent on each individual. Therefore, providing users the ability to control the social element of VR retail environments could be more effective in inducing positive emotions (e.g. joy and delight).

Previous literature has demonstrated the relationship between e-store layout design and purchase intentions when mediated by emotional arousal and attitude (Wu and Wang, 2013; Wu and Wang, 2011). In this study, the visitor interviews indicated that difficulty with navigation as a result of ineffective layout design interfering with presence would result in negative emotions (e.g. stress or anxiety). Indeed, prior tourism research (e.g. Correia et al., 2017; Li et al., 2015; Jang and Namkung, 2009) has validated Izard's (1977) Differential Emotions Scale employing fundamental positive and negative emotions. However, during the survey data collection in this study, few respondents stated experiencing negative emotions, which resulted in all negative emotions being removed from the structural model. This could be explained by the perceived ease of layout design in Application C given that it was a simple layout and respondents were provided clear instruction on the set task as previously mentioned. Additionally, the indirect effect of layout design on emotional arousal through presence was not supported during the quantitative analysis. Therefore, similar to prior research, this study suggested that as retailers design their virtual stores, effort needs to be made to enable users to easily understand and navigate the site layout in order avoid irritation and interfere with consumers' perceived control (Domina et al., 2012), however, this study extended this suggestion to the wider town centre/urban environment. By ensuring users can easily navigate the VR retail environment, it is anticipated that this would stimulate positive affective and cognitive responses. However, further research would be required to support this statement.

Moreover, in accordance with prior research (Fiore et al., 2005; Klein, 2003; Kim and Biocca, 1997; Shih, 1992), the hypothesised positive relationship between presence and attitude was significant therefore providing support for H8. Prior advertising studies have identified positive correlations between presence and more favourable attitude toward the ad and brand (Klein, 2003; Li et al., 2001, 2002; Choi et al., 2001). In the tourism literature, Tussyadiah et al., (2018) found a significant direct effect of presence on attitude change, which confirmed that the extent to which participants' process information in the virtual environment influences changes in liking, preference and interest in the actual environment. Similarly, the current research found a positive relationship between presence and users' attitude towards the VR retail environment and their behavioural intentions in the urban shopping destination context. Overall, this indicated positive attitudes toward the retail environments viewed in VR and towards using VR retail applications.

In this study, the visitor interview findings also indicated that attitudes were formed based on the extent to which the virtual aesthetics stimulated a sense of presence. The indirect effect of virtual aesthetics on attitude was also supported by the quantitative analysis. More specifically, visitor interview participants view on the shopping destination Dubai before and after the VR experience were positively different. These findings were further supported by the urban place marketers' interview findings, which suggested that viewing an urban shopping destination in VR could positively influence potential visitors' attitude and perceptions with regards to destination image. Overall, these findings extended findings by Hyun and O'Keefe (2012) where presence was found to result in positive virtual destination image.

Moreover, the visitor interviews suggested that experiencing the cultural aspect through multisensory, immersive VR could challenge potential visitors' perceptions in terms of perceiving the urban shopping destination as more attractive and appealing. Indeed, prior studies have also indicated that viewing a destination in VR could assist potential visitors in developing realistic expectations of the tourism experience at the destination (Hyun and O'Keefe, 2012; Nicoletta and Servidio, 2012; Govers et al., 2007; Thomas and Carey, 2005; Tooke and Baker, 1996; Cheong, 1995; Guttentag, 2010; Williams and Hobson,

1995). The contradictory results could be because of the limitations of Application C given that it did not allow participants to explore the entire urban shopping destination as previously mentioned. Therefore, this limited the ability to explore the entire urban shopping destination's atmosphere and environment through immersive VR.

The influence of interactivity on attitude toward the online retailer and behavioural intentions (e.g. impulse buying and online purchasing) has been explored (Vonkeman et al., 2017; Campanelli, 2004; Fiore and Jin, 2003; Gehrke and Turban, 1999; Hartnett, 2000; Li et al., 2001; Wu, 1999). Consistent with Li et al., (2001), the visitor interviews indicated that modifying virtual products had a positive effect on attitude toward the retail environment. Additionally, the findings in this study indicated that interactivity that requires specialist equipment could negatively affect attitude toward using VR, given that more advanced equipment and therefore investment would be required. These findings were further supported by the quantitative results demonstrating an indirect effect of interactivity on attitude through presence, and an indirect effect of interactivity on behavioural intentions through presence and attitude.

However, in this study, the results indicated that increased interactivity heightened the sense of presence, which then influenced potential visitors' attitude towards both the VR retail environment and using the VR retail application. Therefore, these findings further assert the role of interactivity to increase presence in VR retail applications in the urban place context. As a result of potential visitors forming positive attitude towards the urban shopping destination from using the VR retail application, both retailers and urban place marketers can benefit from an increase in potential visitors' positive behavioural intentions (e.g. positive WOM).

Overall, this subsection has provided a discussion on the following emergent findings in this study. First, the hypothesised positive relationship between presence and emotional arousal (H7) and presence and attitude (H8) was supported by the quantitative results. Additionally, the indirect relationships between virtual aesthetics, interactivity and social presence (stimulus) and emotional arousal/attitude through presence (organisms) were confirmed, which further supported the order of these constructs in the proposed model.

The following subsection provides a more in-depth discussion on the relationship between emotional arousal/attitude and behavioural intentions and the indirect effects of the VR retail environment cues on behavioural intentions through presence, emotional arousal and attitude.

9.2.3 Behavioural Intentions (Stimulus)

Consistent with prior research (Jung et al., 2017; Tussyadiah et al., 2017; Tussyadiah et al., 2016; Fox et al., 2014; Pantano and Corvello, 2014), the visitor interviews indicated that viewing a destination in VR could influence positive behavioural intentions in terms of real visitation. In the tourism literature, Tussyadiah et al., (2018) found that VR presence could be effective to induce intention for first time visitation and/or re-visit intention. In particular, interview participants expressed interest in visiting the urban shopping destination (Dubai) after viewing it in VR, which they had not considered previously. Similar to prior research (Tussyadiah et al., 2018), the interview data demonstrated that VR allows for a subjective experience in a virtual environment to eventually translate into real behaviour (i.e. real visitation), which supported the persuasive power of VR for marketing urban shopping destinations. However, the survey findings indicated that respondents did not intend to visit the retailer and/or urban shopping destination viewed in VR. This could be explained by the retail focus of Application C given that it restricted respondents to experiencing only one retail store within an urban shopping destination and did not allow the user to explore the broader tourist offerings at the urban shopping destination. In support of this, the interview findings indicated that viewing the various touristic aspects (e.g. restaurants and attractions) of the urban shopping destination in VR was perceived to be an important factor in this context. Therefore, although the survey findings did not support the relationship between individuals' internal response and intent to visit the retail places viewed in VR, this could be due to the limitation of Application C.

On the contrary, Application A allowed participants to experience various parts of the urban shopping destination, which provided them with further insights into the urban destination offerings and therefore could assist with trip-planning and making more informed decisions (Disztinger et al., 2017; Huang et al., 2013; Klein, 2003). On these

bases, it could be assumed that when developing VR retail applications in the context of urban shopping destinations, displaying a variety of relevant content (e.g. shopping areas, retailers, and also restaurants and other attractions) is important in order to encourage people to visit the city. This is supported by prior research demonstrating VR's ability to influence real visitation to actual tourism destinations (e.g. Jung et al., 2017; Tussyadiah et al., 2017; Tussyadiah et al., 2016; Fox et al., 2014; Pantano and Corvello, 2014). These findings are also supported by the industry interviews as discussed below, however, further studies are required in order to confirm this relationship in the specific context of urban shopping destinations.

Prior research has also indicated that it is important to understand how VR could be integrated into trip planning, to positively influence the decision-making process and influence potential visitors' behavioural intentions (e.g. Griffin et al., 2017; Disztinger et al., 2017; Huang et al., 2013). Similar findings were revealed in this study; however, this study contributed an alternative industry perspective on these existing findings. More specifically, the industry interview data indicated that VR could potentially increase the visitor number at an urban shopping destination by facilitating a more seamless booking procedure during the pre-visit phase and enable visitors to make more informed purchasing decisions on which city to visit. In turn, this could positively motivate potential visitors to visit the urban shopping destination and encourage referral behaviour by WOM and social media recommendation. Indeed, all visitor interview participants stated they would use the VR retail applications again in order to view the various retail places in VR and potentially shop in VR in the future as the technology advances.

The intent to repeat the VR experience was supported by the survey findings. Previous research (Guttentag, 2010; Stangl and Weismayer, 2008; Kerawalla et al., 2006) has argued that novel and exciting VR experiences could act as a personal push factor in potential visitors' future usage of VR. The intent to recommend was also supported by the survey data indicating that the majority of respondents would encourage friends and family to use the VR retail applications and were encouraged to communicate positive WOM. Encouraging referral behaviour is important given that social media was confirmed as an important tool for urban place marketers in the industry interviews, and prior

research (Hays et al., 2013) has indicated that social media is widely used by online travellers and is vital for tourism marketers to reach global audiences with limited resources.

The visitor interviews also explored participants' willingness to purchase using VR retail applications and/or to purchase a trip to the urban shopping destination after using VR. By synthesising these findings with the visitor interview data, it could be concluded that respondents were more interested in purchasing products in VR rather than purchasing a trip to the urban shopping destination viewed in VR. In support of this, the findings discussed above did support the positive relationship between VR retail applications and intent to visit the retail places viewed in VR. Therefore, this emphasised the importance of interactivity and allowing users to interact and modify the virtual retail environment and potentially purchase products in VR as previously discussed. In support of this, the quantitative results indicated an indirect relationship between interactivity and positive behavioural intentions through presence and emotional arousal/attitude, including willingness to buy through VR shopping applications. Indeed, Schnack et al., (2018) also concluded that participants' in-store behaviour resembled their real-life purchase decisions to a large extent. These findings reinforced the assumption that high presence leads to more realistic behaviour as argued by Slater (2009).

More recently in the VR domain, Martinez-Navarro et al., (2019) found that purchase intention is affected by the VR format, and 3D imagery as opposed to 360-degree video, affected purchase intention to a significant extent. This seemed logical, particularly in relation to this study given that participants could interact only with 3D products, whereas the 360-degree video was more of a passive experience with limited interactivity. However, it should be noted that the mechanism through which VR elicits purchase intentions in commercial settings has not been deeply analysed and needs further investigation (Grewal et al., 2017). The limitation outlined above with regard to VR content (i.e. viewing additional aspects of the city) should also be taken into consideration and future studies are suggested in line with VR retail developments. Indeed, Manis and Choi (2019) argued that the VR industry must refine and develop more relative content to increase the usefulness of VR in general and VR hardware in particular. Overall, the

survey findings supported the positive expected relationship between emotional arousal and three behavioural intentions (H9) and attitude and three behavioural intentions (H10) therefore supporting these two hypotheses. More specifically, the survey results provided support for the intent to recommend, intent to purchase and intent to use VR again. However, the findings did not provide support for intent to visit the places featured in VR.

As discussed in the previous chapter, other immersive technology S-O-R models (e.g. Dad et al., 2018; Kim et al., 2018; Shiau et al., 2017; Kourouthanassis et al., 2015) and other immersive technology TAM models (e.g. Disztinger et al., 2017; Rese et al., 2016; Rauschnabel and Ko, 2016; Huang et al., 2013) have been proposed. The proposed VR Visitor Behaviour S-O-R model in this study differs from these models in a number of ways. For example, Dad et al., (2018) proposed an S-O-R model, which focused on one atmospheric cue in the context of VRR stores in virtual worlds and its influence on approach/avoidance behaviour mediated by pleasure/arousal. In comparison, this study took a holistic view of VR retail environment cues and integrated numerous environment cues and its effect on behavioural intentions by testing both the direct and indirect relationships between variables within the proposed model. More specifically, the proposed model in this study provided a starting point for further research focusing on one or more atmospheric/environment cue given that these preliminary findings have already indicated the applicability of interactivity, virtual aesthetics and social presence in this context.

Moreover, Disztinger et al., (2017) proposed a TAM model in focusing on VR and trip planning as discussed in the previous chapter. Accordingly, the researchers incorporated perceived immersion into the model given that it was found to be a valid predictor of behavioural intentions and more specifically, as the intensity of immersion increases, the intention to use and consequently the acceptance of the system also increases (Disztinger et al., 2017). These findings are similar to this study's findings indicating that presence indirectly effects behavioural intentions including intention to use VR again. Additionally, Huang et al., (2013) found that TAM constructs of perceived ease of use and usefulness play an important role in influencing the potential tourist's emotional involvement in the tourism destination. In this study, the indirect relationship of usability,

which incorporated ease of use but also efficacy, and emotional arousal was not supported by the quantitative data. These contradictory findings assert the need for further research investigating a combination of TAM and VR environment cues in retail and tourism research.

Previously, researchers (Dad et al., 2018) pressed for further studies on additional atmospheric cues in VRR stores, therefore, the proposed model in this study could be useful for researchers aiming to bridge this research gap and also for those aiming to broaden the scope to the wider urban context. Additionally, as previously mentioned, Kim et al., (2018) proposed a VR model inclusive of authentic experience (S), cognitive response and affective response (O) and attachment to VR and visit intention (R). This model is similar in terms of the organism component of cognitive and affective response, although their affective state consisted of enjoyment, emotional involvement, and flow state while this study draws on Izard's (1977) Differential Emotional Scale and initially considered both negative and positive emotions. However, the stimuli differ as the authors focus more on tourist's perception of an authentic VR tourism experience rather than specific atmospheric/environment cues of said experience. Additionally, Kim et al., (2018) confirmed visit intention as a VR experience outcome in the tourism context, while this study did not in the urban place context.

Overall, this subsection has demonstrated the contributions emerging from this study in relation to the direct relationships between behavioural intentions and both attitude and emotional arousal. Additionally, this section justified behavioural intentions as the response with the proposed S-O-R model and highlighted both the direct and indirect relationships between the VR retail environment cues and behavioural intentions through presence and emotional arousal/attitude. More specifically, the contributions discussed throughout this subsection are detailed below.

First, the survey findings supported the positive expected relationship between emotional arousal and three behavioural intentions (H9) and attitude and three behavioural intentions (H10), thus supporting these two hypotheses. More specifically, the following three behavioural intentions emerged in the interview findings and were later confirmed by the quantitative results: intent to repeat the VR retail experience; intent to recommend

the VR retail applications; and intent to purchase a) using VR retail applications and 2) purchase a trip to the urban shopping destination after experiencing it in VR, although the intent to purchase using VR retail applications was more significant.

Second, despite being confirmed in prior VR tourism studies, the survey findings indicated that respondents did not intend to visit the retailer and/or urban shopping destination viewed in VR.

Third, the discussion reinforced the indirect relationship between interactivity, virtual aesthetics and social presence and behavioural intentions through presence and emotional arousal/attitude.

9.3 Summary

The purpose of this chapter was to synthesise the findings from the two research phases to demonstrate how the final aim was achieved. Through this process, consistent themes became evident among the data from the research phases and between the data and prior research. While some contradictory results exist, leading to the elimination of three hypotheses, other results compared well with previous literature, which further validated the inclusion of seven total constructs in the proposed VR Visitor Behaviour S-O-R Model. Through this discussion and data synthesis, several conclusions and avenues for further research have become evident and are discussed in more in-depth in the following chapter, which concludes the study, provides the contributions to knowledge and implications for industry and offers avenues for further research.

Chapter 10 - Conclusions

10.1 Introduction

The final chapter begins by reviewing how the aim and objectives were achieved. This is followed by a discussion of the contributions to knowledge and managerial implications for urban place marketers and VR developers and designers. Finally, the limitations of this study and recommendations for both future research and urban place marketing practice are offered.

10.2 Conclusions

This section refers back to the objectives sequentially in order to demonstrate in detail how each of the objectives have been achieved. The final objective represents the main contribution of the overall research.

10.2.1 Objective 1

The first research objective was to critically review four key research areas including: 1) urban place marketing, 2) retail store environment, 3) immersive technology and 4) technology adoption. The research began with a review of urban place marketing literature to provide context for the thesis. This section explored the practice of urban place marketing within the broader context of urban tourism and marketing urban tourism destinations through place marketing strategies. Importantly, this section highlighted how retailing is increasingly used by cities aiming to attract and retain visitors within the global competitive environment. This led to the discussion on experiential marketing in both the retail and tourism destination domains and subsequently to drawing on retail store environment theories. Given this study's focus on urban shopping destinations, these literature findings were then compared with out-of-store environment research and highlighted the lack of research on the latter by comparison. This section documented the shift to omnichannel retailing and highlighted the importance of utilising virtual shopping platforms and retail marketing strategies in the increasingly digital age. Importantly, this section introduced the S-O-R theory and demonstrated its prominent role within retail store environment research (in both physical and virtual environments). With the

increasing popularity of emergent technologies and retail and destination marketing platforms (i.e. VR) proving useful for marketing places, it is increasingly important to extend these research streams into v-commerce. Indeed, over the last few years, researchers (e.g. Dad et al., 2018) have begun this investigation; however, the present study is the first to extend this research in the context of VR and urban places. Hence, the final literature chapter draws on VR research in both the retail and tourism marketing domains and synthesises these in order to inform the VR and urban shopping destination context.

10.2.2 Objective 2

The second research objective was to investigate visitors' behavioural response toward VR retail environment cues in the context of urban shopping destinations. This was associated with Research Phase 1 of the data collection and was achieved by conducting two sets of interviews including seven semi-structured interviews with urban place marketers in the UK and twelve semi-structured interviews with visitors to a UK urban shopping destination. The industry interviews aimed to provide insights into urban place marketers' views on the opportunities and barriers of using immersive technologies (AR and VR) to market retail places, as well as their future intention to adopt these innovative technologies. The findings revealed three new sub-themes specific to the VR context and were useful to inform the VR focus for the visitor interviews.

More specifically, by synthesising the interview findings with prior literature, it was concluded that VR could potentially play an important role in the future marketing of urban shopping destinations. Accordingly, the visitor interviews aimed to draw on participants' internal response to the VR retail environments in order to determine the influence of VR retail environment cues on visitors' behavioural intentions in the context of urban shopping destinations and to draw out emergent themes specific to VR. The findings revealed six key sub-themes specific to the VR retail environment that could potentially influence visitors' behavioural intentions. By comparing the findings from both sets of interviews, several commonalities and differences were revealed (see 12.3). These findings were used to develop a qualitative VR Visitor Behaviour S-O-R Model.

10.2.3 Objective 3

The third objective was to then validate the proposed model portraying the influence of the VR retail environment cues on visitors' behaviour in an urban shopping destination context. This was achieved by gathering survey data with potential shopping visitors and conducting quantitative data analysis on 150 survey responses using PLS-SEM (Research Phase 2). The results provided support for seven out of ten hypotheses and overall seven constructs were included in the final model. More specifically, the survey supported that three VR retail environment cues, namely, virtual aesthetics, interactivity and social presence positively influence presence, presence positively influences emotional arousal/attitude, and emotional arousal/attitude positively influence behavioural intentions. Additionally, these three VR retail environment cues indirectly effect behavioural intentions through presence and emotional arousal/attitude. Consistent with prior research (e.g. Wu et al., 2013; Eroglu et al., 2001), both affective and cognitive states were found to positively affect behavioural intentions. However, this study specifically investigated the relationship between emotional arousal and attitude and behavioural intentions. Therefore, these findings extend this research by empirically validating the effects of VR retail environment cues on two specific internal responses and presence in the VR context, which extends this stream of research.

10.2.4 Objective 4

The final objective was to propose a new theoretical model portraying the influence of the VR retail environment cues on visitors' behavioural intentions and provide guidance to urban place/destination marketers. This proposed model was the main contribution to knowledge and purpose of this research project. Overall, the final VR Visitor Behaviour S-O-R Model consisted of seven constructs and is considered an extended S-O-R model and one of the first to be developed in the context of VR and urban shopping destinations. Overall, the findings of this research offer important considerations for both researchers and industry experts and these implications are discussed in more depth throughout this chapter.

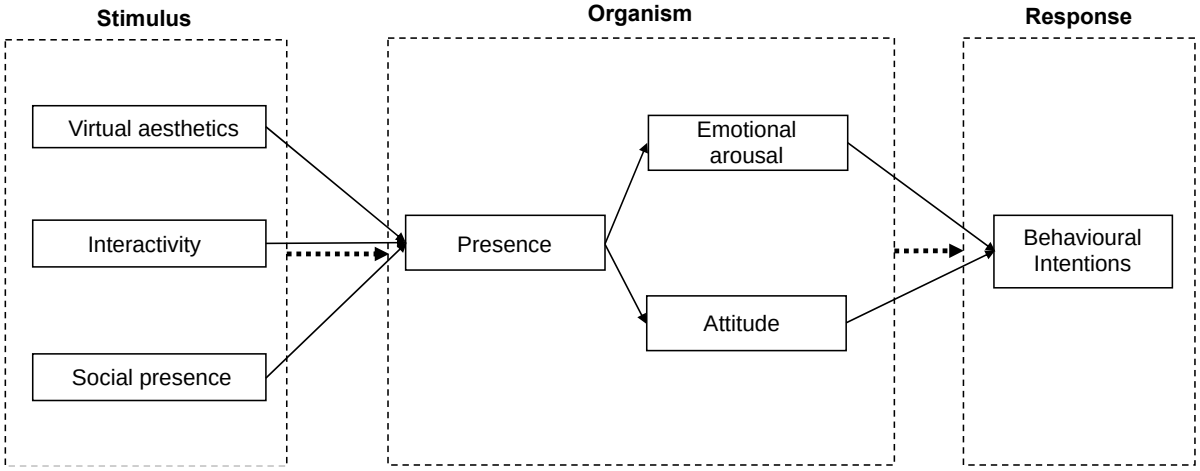
10.3 Contributions and Implications

This section outlines the contributions to knowledge before presenting the managerial implications for urban place marketers and VR developers and designers. This study has a number of contributions to knowledge in relation to adapting S-O-R theory to the VR context and contributing to four literature areas including 1) S-O-R, 2) immersive technologies, specifically related to VR, 3) retail store environment and 4) urban place marketing research. Managerial implications are offered with regards to the effective design and implementation of VR as an urban place marketing tool, which could be useful for VR developers and designers, urban place/destination marketers and retail marketers.

10.3.1 Contribution to Knowledge

This study's main contribution was the development of a proposed VR Visitor Behaviour S-O-R Model (see Figure ***10.1***) portraying the influence of VR retail environment cues on visitors' behavioural intentions in the context of urban shopping destinations. The most theoretically important finding in this study is the validation of the adapted S-O-R model to include three important stimuli specific to VR retail environments including virtual aesthetics, interactivity and social presence. This research theoretically validated several direct and indirect relationships between the constructs incorporated into the final model. By adapting S-O-R theory to a new context, this study provided academics with useful insights for theory formation and verification of the S-O-R paradigm. The current research validated the adapted S-O-R model to the VR context with the inclusion of specific stimulus (virtual aesthetics, interactivity and social presence), organisms (presence, emotional arousal/attitude) and response (behavioural intentions) in the context of urban shopping destinations. These findings contributed theoretically to immersive technology research more broadly and VR research more specifically. Additionally, by drawing on technology adoption research and the theoretical foundations of the TAM to support to development of the extended S-O-R model, this study provided important contributions to TAM research as outlined in more detail below.

Figure 10.1. Final VR Visitor Behaviour S-O-R Model



(Source: Authors own)

More specifically, this study is the first to propose the inclusion of the three constructs (presence, emotional arousal and attitude) as organisms in the VR and study context. These findings imply that, the extent to which VR retail applications can stimulate presence through effective virtual aesthetics, interactive features and elements of social presence determines the extent to which the application can stimulate potential visitors' emotional arousal and attitude. Furthermore, this research theoretically validated that three VR retail environment cues can positively influence three behavioural responses including intent to purchase, intent to use and intent to recommend indirectly through presence and emotional arousal/attitude. That is, VR retail applications where the three stimuli are effective in increasing presence and therefore leading to stronger emotional arousal and positive attitudes will increase the likeliness of positively influencing potential visitors' behavioural intentions.

Contribution to Immersive Technology Research

By integrating virtual aesthetics, interactivity and social presence into the adapted S-O-R model, this study made three key contributions to the VR literature.

The first contribution relates to the direct relationships within the model including between three VR retail environment cues and presence, presence and emotional arousal/attitude

and emotional arousal/attitude and behavioural intentions. More specifically, the findings of the highly significant effect of interactivity on presence contributes to the literature, extending previous studies (Schnack et al., 2018; Vonkeman et al., 2017; Fiore et al., 2005; Klein, 2003; Coyle and Thorson, 2001) demonstrating the relation between interactivity and presence. Although interactivity has received much less attention compared with vividness (i.e. the other antecedent of presence, van Kerrebroeck et al., 2017a), this finding reinforced the importance of interactivity in the development of convincing VR retail applications and implied that interactivity warrants attention in future immersive technology studies. Additionally, both virtual aesthetics and social presence have a highly significant effect on presence, which extends prior research and reinforces two new contributions of this study.

Further, the three cues significantly affect the organism process, including presence, emotional arousal and attitude towards the retail places viewed in VR. More specifically, presence was found to positively influence emotional arousal, which provides implications for academia as well as broadening prior studies suggesting the influence of emotions on presence (Martinez-Navarro et al., 2019; Gorini et al., 2011; Bouchard et al., 2008; Riva et al., 2007). Similarly, the relationship between presence and attitude was confirmed, which contributes to prior research (Fiore et al., 2005; Klein, 2003; Kim and Biocca, 1997; Shih, 1992).

The second contribution focuses on the indirect relationships between the VR retail environment cues and behavioural intentions. This study concluded that the three VR retail environment constructs included in the final model have a positive indirect effect on behavioural intentions. These findings support the inclusion of the seven constructs in the model and interrelationships between them. Importantly, the findings support the indirect relationship between presence and behavioural intentions, which further supported its inclusion as an organism component within the proposed S-O-R model. Additionally, the indirect relationship between the three VR retail environment cues and emotional arousal and attitude was confirmed, which further supported the proposed theoretical model.

The final contribution relates to how both the significant and insignificant relationships extend both VR and S-O-R research and paves the way for further research in this area. Specifically, even though this study did not support three of the hypotheses, it provides important theoretical implications for comprehending potential visitors' behavioural response to specific VR cues using the S-O-R theory. The hypotheses that were not supported by the data also offer important contributions. For example, while virtual atmospherics and layout design are considered important environment cues in prior physical and virtual retailing studies, the relevance in the VR context was not supported, which could infer that virtual atmospherics and layout design are inferior to other studied stimuli (i.e. virtual aesthetics, interactivity and social presence) in the VR retailing context. Additionally, while usability factors have been considered important in VR and technology adoption research, the inclusion of this construct within the adapted S-O-R model was not supported. However, this could have been due to usability being less meaningful compared with the other measured constructs and in the study context. Overall, these findings provide a new starting point for VR research extending S-O-R theory and will considerably broaden or extend previous studies.

Furthermore, this study's findings also contribute to retail store environment research, urban place marketing literature and technology adoption research, which are discussed in more detail below.

Contribution to Retail Store Environment Research

The findings in this study contribute to retail store environment research by extending prior literature on human behaviour in both physical and virtual retail environments in two ways. First, it was found that both affective and cognitive responses positively affect behavioural intentions. This extends previously theorised assertions of the relationship between affective/cognitive states and behavioural intentions suggested by previous studies (Wu et al., 2013; Eroglu et al., 2001) by proving these relationships in the specific context of VR and urban shopping destinations. As a result, this research provided a better understanding of potential visitors' response to VR retail environment cues based on a theoretical framework of stimulus, organism and response in the context of urban shopping destinations.

Contribution to Urban Place Marketing Literature

This is also an important contribution to the urban place marketing literature and a second contribution lies in the proposed model. More specifically, the model was proposed based on potential visitors to urban shopping destinations, which provided important insights for researchers in the field on the power of VR in positively influencing visitors' attitudinal, emotional and behavioural response towards these city destinations. As such, it reinforced the influential power of VR as a destination marketing tool, to attract international visitors including key market segments, and to change destination image from the perspective of these individuals. In support of this, the industry interviews offer important insights on urban place marketers' views on integrating both AR and VR into their strategic marketing plan. Although the sample was limited, these findings offer a starting point for further research by highlighting the potential opportunities and challenges and intent to adopt these technologies as perceived by industry professionals.

Contribution to Technology Adoption Research

Moreover, both sets of interview data indicated factors associated with adoption of VR technology, which offers two important contributions to technology adoption research.

Firstly, the industry interviews suggested that visitors might not be ready to adopt VR yet due to several barriers, which was further supported by the visitor interviews. More specifically, the barriers from both industry experts and potential visitors were associated with the usability of this technology in terms of visitors being accustomed to wearing HMDs and investing in these technologies for home usage. With regards to TAM, these findings indicated that the perceived usefulness of VR, in terms of having various uses so that potential visitors can justify the investment of VR technologies, was considered an important determinant of VR adoption.

Second, the findings indicated that this technology is still in its early stages of development, and further hardware and software developments could encourage visitor adoption of VR. More specifically, visitors were concerned with the quality of the graphics to heighten presence, while both visitors and industry experts expressed that the VR hardware and software must be easy to use for the wide range of visitors that a city

attracts, which relates to TAM research indicating that usability and more specifically, perceived ease of use, is an important determinant of user technology adoption.

Overall, these findings contribute theoretically to VR technology adoption research and offer important considerations for designers and developers its terms of factors to consider when developing VR applications for retail and urban place marketing purposes. From a scholarly perspective, this study contributes to a gap in the literature in relation to the potential for VR technology within retailing in the context of urban shopping destinations by identifying specific factors that contribute to potential visitors' adoption of VR technology.

10.3.2 Practical Implications

This study provides important implications for urban place marketers including destination marketers with validation that VR can be an effective marketing tool for urban shopping destinations. For example, the investigation into the behaviours generated by VR retail applications demonstrated how it can lead to favourable outcomes such as WOM recommendations and increased purchases. Urban place managers interested in proposing new experiences to their audiences using VR applications could find this study useful because it underlines which type of content can best contribute to creating a memorable, enjoyable experience, while positively influencing potential visitors' perceptions and behaviour. All these aspects of VR represent a marketing opportunity for Destination Management Organisations (Marchiori et al., 2018) and other urban place marketers (e.g. BIDs), perhaps in collaboration with DMOs to develop a holistic VR retail application that portrays various shops, shopping malls and local towns and markets, as well as the broader urban shopping destination. Therefore, investing in VR for marketing urban shopping destinations in line with the increasing accessibility of VR to a wider group of consumers could prove beneficial for these marketers.

Further, the results suggested that users have certain expectations with regard to functionality, content and usability of VR retail applications and HMDs. For example, the important features included interactivity, social presence and virtual aesthetics, which provides important considerations for the design of content and functionality to include in VR retail developments. Importantly, these elements were the strongest predictors of

presence, leading to positive internal response and behavioural intentions. Given their influence on increasing presence, these factors should be carefully implemented into the design of VR retail applications. The visitor interviews also revealed the importance of high-quality content (e.g. videos, images and sound effects) and more advanced technical aspects (e.g. lightweight headset, USB port, Bluetooth, 4k capabilities and sharper focus) when developing VR retail applications, which means that designers and marketing managers must constantly update their products. For example, visitor interview participants reported that the graphics of Application A were lower quality than previous VR applications using the same HMD and many participants experienced problems with focusing in using the headset functionality to sharpen the graphics on both Application A and B. However, while these VR retail applications had some shortcomings in terms of visual realism of products and the shopping environments, these flaws can be addressed by future software developments.

Additionally, participants expressed preference towards interactive functions that were more comparable to real world shopping. Similarly, in prior research (Schnack et al., 2018) interactions with the environment using motion-tracked controllers were perceived as more natural. These findings are consistent with prior research investigating influences of control devices, display type and audio cues on presence (Seibert and Shafer, 2017; McGloin et al., 2011; Nichols et al., 2000; Hendrix and Barfield, 1996). Therefore, it is recommended that future VR retail developments in the urban place domain integrate motion-tracked controllers to facilitate interactive features. The substantial recommendations for technological improvements were mainly provided by those who had already experienced VR before (e.g. PlayStation VR) or who demonstrated an interest in other technologies. This indicated that prior VR experiences (Marchiori et al., 2018) and the individual's technological knowledge might set a level of expectation for future VR experiences. In support of this, it is assumed that people who are familiar with modern gaming (Schnack et al., 2018) and/or VR have a higher expectation of realistic high-resolution graphics than those who are in-experienced. This is based on the assumption that they are more aware of the state-of-the-art in the current video gaming (Schnack et al., 2018) and VR industries. Indeed, as VR becomes more popular, an increasing number of potential visitors will be exposed to VR experiences and might have

already tried them. This also became evident during survey data collection as half of respondents had previously used VR, therefore, it could be argued that the levels of expectation regarding the quality will be dictated by the technological standards of the VR market, which must be guaranteed by the designer (Marchiori et al., 2018).

The interview data indicated there should be a focus on the diversity of the content displayed in VR retail applications, which is important because people want to view new places rather than learning about places they already know. Having said that, including familiar/top tourist attractions is equally important when advertising the broader tourist destination. Indeed, the decision on whether to feature stereotypical images or focus on promoting undiscovered aspects of a destination is considered a marketing task (Marchiori et al., 2018). This study underlines how users expect to not only try a new device but also experience something new in the destination (Marchiori et al., 2018). Similar to Tussyadiah et al., (2018), this study highlighted the importance of generating VR content that can transport participants to a particular environment, heighten the senses of being in the virtual environment and suspend sensory stimuli from the actual physical environment. These findings are useful for technology developers who should take into consideration the factors affecting visitors' decision to use VR, and for public and private actors interested in promoting a touristic destination who should consider using VR to generate interest in potential visitors (Pantano and Corvello, 2014).

The urban place marketers suggested that people might not enjoy the usability of VR HMDs and this could act as a significant barrier to consumer adoption, which is important given that urban place marketers want to reach out to a diverse population (Ijsselsteijn, Nap, de Kort, and Poels, 2007). Therefore, it is recommended that VR hardware should remain simple and easy to understand, while design interfaces should focus on simplicity and intuitiveness in order to make VR more useful for a wide variety of visitors (Manis and Choi, 2016; Ijsselsteijn et al., 2007). Indeed, maintaining a balance between functionalities and the friendliness of the interface (Natarjan et al., 2018) when designing VR retail applications is essential to maximise usability. Additionally, the interviews with urban place marketers revealed potential opportunities and challenges of implementing VR and assessed their intention to adopt such technologies. Therefore, these findings

reinforce that the usability and implementation of VR must be a relatively simple process not just for visitor usage but due to barriers of the organisation's capability (e.g. employee skills and knowledge) and availability of resources (e.g. time and money), which must be considered by developers and designers when collaborating with urban place marketers on such projects. In order to facilitate adoption, it is imperative that such technologies are compatible with the organisation's existing infrastructure and can be easily integrated (Wang et al., 2016).

Throughout the primary research with industry professionals, it was revealed that competitive pressures could act as a driver to implementation and the same has been confirmed in other studies investigating organisational adoption of other technologies (Khan and Ali, 2018; Jia et al., 2017; Maduku et al., 2016; Lian et al., 2014; Wang et al., 2011). Indeed, prior research has demonstrated that a highly competitive environment urges companies to adopt methods and procedures to become more efficient and profitable (Jeon et al., 2006). In markets with strong competition, companies rely on information from the external environment in order to enhance their technological infrastructures, while technological innovations have long been regarded as prerequisites of success (Zhu et al., 2006). In particular, the increasing competition among urban shopping destinations around the globe (Ichikawa et al., 2017; Griffin and Dimanche, 2017; Xu and Zhang, 2016; Walls and Wang, 2011; Baker and Cameron, 2008) was highlighted as a concern by several participants and implementing immersive technologies could be an effective way for these destinations to remain competitive and attract key markets. Indeed, attracting key global markets through the use of AR and VR was identified as a perceived benefit of implementing these technologies. In particular, markets including Millennials, Asia-Pacific and GCC account for a large portion of the travel retail market and are interested in technology as identified in this study and in prior marketing reports (Nielsen, 2017b). These findings reinforce the importance of integrating immersive technologies to attract key markets and overall, these findings indicated that integrating AR and VR into existing platforms (e.g. social media and website) could be a more efficient and effective way for urban place marketers to experiment with these technologies and reach these target markets.

10.4 Limitations

This study has several limitations associated with the research design, which could be mitigated by further research. Firstly, the semi-structured interviews with urban place managers provided valuable insights into their perspectives and intention to adopt immersive technologies such as AR and VR and exposed several potential opportunities and challenges urban place marketers could face when planning to implement such technologies. However, although a definition of AR and VR and examples of relevant use cases were provided during the interviews, participants' level of knowledge and experience with AR and VR devices were varied and, in some cases, limited. Therefore, it could have been useful to provide a demonstration of both technologies in order to deepen the conversation and potentially strengthen the findings. A small sample of seven participants was used for this part of data collection, which limits the scope of the analysis and could act as a significant obstacle in finding a trend and a meaningful relationship. Similarly, because only three urban shopping destinations in the UK were used as a multi-case study, this poses limitations with regards to generalisability.

The semi-structured interviews conducted with visitors to an urban shopping destination aimed to draw on participants' subjective feelings towards the VR retail environment cues; however, this could be limiting in that participants might be too reserved to express their real feelings to the researcher whom they have just met. Additionally, these interviews were conducted after participants experienced VR, which means that the response may still contain inaccurate information and biases because it relies on participants recalling the VR experience (Tussyadiah et al., 2018). Providing more accurate measures of participants' feelings could be achieved through the use of sensors measuring physiological data such as HR, which is based on quantitative measures, and could help to eliminate bias. In support of this, Schnack et al., (2018) suggested that once further developed and tested, virtual stores using VR technology offer an attractive alternative to traditional survey techniques due to the potential to capture actual in-store behaviour rather than stated intentions. Having said that, Marchiori et al., (2018) conducted a study using physiological measures followed by self-report measures and highlighted the importance of using participants self-reported perceptions because it helped the

researchers identify the most effective characteristics in the VR experience. Therefore, although physiological data might indicate emotional arousal, the reasons behind such arousal must be triangulated using other data (Meehan, 2000; Morina et al., 2015; Wiederhold et al., 1998). Using subjective measures (i.e. self-reported perceptions) could avoid biases (Schuemie et al., 2001; Diemer et al., 2015), therefore, emotions were also measured in the quantitative data collection in order to provide a more accurate measure of emotional arousal.

Moreover, the quality of the VR retail applications and HMDs used for the interviews and survey data could have affected participants experience of using VR. Application B was considered limiting because it was a computerised environment, which could have negatively influenced participants experience. Application C was a combination of real and 3D content and therefore could have similar limitations. For example, Schnack et al., (2018) suggested that the negative visual experience might have interfered with the visual realism of products and recommended using a higher resolution for the product scans. These findings are in line with prior research (Lee and Kim, 2008) indicating that increasing the resolution of video images leads to an enhanced visual realism and was evident in this study. The 360-degree YouTube video (Application A) when played in the Samsung GearVR HMD was low quality, and this was frequently pointed out by interview participants, which indicated that the quality of the applications distracted certain participants from focusing on the shopping aspect of the VR application. Additionally, Application B lasted approximately 90 seconds and provided participants with a short demo, which could have impacted on participants ability to detach from reality and therefore feel more present in the virtual environment. Since devices are a fundamental part of the experience, the devices must be comfortable for the consumer in order for VR to succeed in retailing (Bonetti et al., 2018). Consumers who find VR hardware easier to use will also find VR hardware to be more useful, therefore, consistent with Manis and Choi (2019), it is recommended that practitioners consider all aspects of design with the consumer in mind.

Furthermore, at the time of survey data collection, there remained limited availability of VR retail applications available to the consumer market, which meant that the application

deemed most appropriate and available was used. This included an existing prototype available to the consumer market. Although the VR retail application was useful in providing potential shopping visitors with an insight into how VR could be used for this specific purpose, the application was limited in its functionality, variety of content, and likeness to real world shopping (e.g. there was no changing room or store assistants present in the virtual environment as there would be in a physical shopping environment). For example, the study did not prompt actual buying behaviour in the retail environments that were visited as the features were limited on the VR retail application. Enabling participants to actually purchase goods would further enrich the understanding of actual purchasing behaviour in VR retail applications. Therefore, further studies are required in line with VR developments in the retail sphere in order to offer opportunity for more fruitful analysis of visitors' experience in VR retail environments. In support of this, Pantano and Corvello (2014) pointed out that advancements in context-specific VR applications could provide more innovative, enjoyable and useful tools for attracting a wider variety of visitors.

Limitations of the Developed VR Visitor Behaviour S-O-R Model

While the theory underpinning the proposed model provides insights into the direct and indirect relationships between VR retail environment cues and potential visitors behavioural response indirectly through the three organism variables, this model is without limitations that could be mitigated by further research.

First, the proposed model was developed based on specific constructs considered most applicable to this study context; however, future conceptual models may also integrate other stimuli, organism and response. For example, this study considered only six environment cues that were considered potentially important elements in the design of VR retail applications. Although the motive for studying these specific stimuli were justified by the literature and exploratory visitor and industry interviews, previous retailing studies have investigated many other specific atmospherics cues such as music (Dad et al., 2018), digital signage (Dennis et al., 2012), e-store colour (Ettis, 2017) and e-store content (Floh and Madlberger, 2013). Similarly, the model employs limited dependent variables (emotional arousal, attitude and behavioural intentions), however, prior studies

have explored arousal, pleasure and behaviour (Dad et al., 2018), enjoyment, concentration and visit duration (Ettis, 2017) and flow, satisfaction and purchase intention (Gao and Bai, 2014) when studying retail environments. Therefore, future studies should employ other independent and dependent variables other than those employed in this study in order to deepen the knowledge in this area and compare the results.

Additionally, while the model proposed relationships between VR retail environment cues and behavioural intentions by three organism components of presence, emotional arousal and attitude, this is the first study to explore these relationships specific in relation to VR and in the study context. While evidence exists that presence in virtual environments is determined by the quality of the graphics (Schnack, 2018; Lee and Kim, 2008), the level of interactivity (Vonkeman et al., 2017; Fiore et al., 2005; Klein, 2003; Coyle and Thorson, 2001) and social dimensions (Ogonowski et al., 2014; Hassanein and Head, 2007), its relationship between said cues and potential visitors' internal response (emotional arousal/attitude) in the VR context is limited. Therefore, although the model is proposed to include presence and emotional arousal/attitude as organism components, additional empirical evidence with a larger, more diverse sample would strengthen these results. This could be achieved by extending or replicating this study and synthesising and/or comparing the results.

Moreover, even though this study did not support three hypotheses, it provides theoretical implications for comprehending potential visitors' response to VR retail environments using the S-O-R theory. The contradictory findings of this study compared with prior literature on the role of atmospheric cues in increasing presence in virtual contexts (e.g. Schnack et al., 2018; Martins et al., 2017; Vrechopoulos et al., 2004) warrants further research using vibrant, multisensory VR retail applications to provide further evidence on its (in)applicability to the VR context. Overall, through the relationship between each of the constructs, the model offers avenues for further in-depth research to strengthen the evidence of these and other relationships.

Furthermore, data were gathered on potential visitors' response to the VR retail environments without any manipulation of the environment. However, as suggested in the literature (Dad et al., 2018), manipulation of the retail environment could allow for better

results with regards to understanding user's response to specific stimuli and therefore provide improvements to the proposed model. Although the model was developed based on urban shopping destinations, it could be that the stimuli are relevant to other types of destinations or retail environments. The model is also based on data collected with a majority UK sample, which limits the ability to generalise the findings. To overcome these limitations, the model should be validated across a range of contexts and geographic settings.

10.5 Recommendations

Based on the findings of this study, the following section presents recommendations for urban place marketers and recommendations for future research in the area of VR and urban shopping destinations.

10.5.1 Recommendations for Urban Place Marketers

Although there are certain barriers that are associated with VR implementation (e.g. resources and organisational capability) as highlighted in the primary research gathered by industry professionals, there are also potential benefits that integrating such technology could provide urban place marketers. For example, strategically implementing VR into the marketing of urban shopping destinations could be a useful tool to support destinations in generating positive WOM and increased purchases. As a result, this could lead to differentiation and competitiveness within the globally competitive marketplace. However, while research interest into VR for retailing and tourism is increasing, industry implementation of VR, particularly in retailing, has been slow to date due to limited expertise, research-based evidence and limited use cases providing indication on its meaningfulness. While the widespread adoption of VR HMDs is yet to arrive, both primary and secondary research indicated that it will arrive in the near future. This provides opportunity for urban place marketers to invest sooner rather than later in order to gain a competitive edge through the use of this technology. Therefore, urban place marketers and retailers are encouraged to invest in the development of context-specific VR retail applications that can provide benefit and value to both existing and potential visitors through meaningful, sociable and interactive experiences, and provide retail places the

opportunity to benefit from increased purchases and WOM recommendations, which could lead to increased visitors.

Furthermore, a large portion of the travel retail market and those expressing and/or demonstrating interest in VR is millennials and similarly, primary research indicated that urban place marketers in the UK are developing many digital marketing campaigns aimed at attracting this particular market from around the world. Therefore, marketing retail places to this specific market through the use of VR could be an effective way to reach this digitally driven generation where VR could act as a platform for communication. Although this study focused largely on the Millennial and Generation X markets, research has indicated that Generation Z (individuals aged between 10 and 17) and Baby Boomers (individuals aged between 51 and 69) have demonstrated substantial interest in VR, with Generation Z being more interested than both Millennials and Generation X in some studies (see Nielsen, 2017a). Given that varying demographics have varying interests (e.g. types of retail places such as local markets or luxury boutiques) and expectations (e.g. functionality of VR retail applications), it is important that urban place marketers develop specific campaigns for each. Therefore, further studies are required to investigate the requirements of VR for different target markets in this specific context in order to facilitate appropriate design and development of targeted VR retail applications.

Moreover, one of the key findings from the urban place marketers' interviews was that evaluating the ROI on immersive technology investment is a key concern for all participants. However, implementing innovative technologies such as VR is considered essential in order for leading city break destinations to remain competitive and attract key domestic and international markets including millennials, GCC and Asian markets. In support of this, Farah et al., (2019) concluded that retailers who adopt VR technology are perceived as being highly innovative and futuristic and these retailers could benefit from higher in-store traffic driven by an enhanced consumer experience across the shopping journey. Indeed, the Asian market accounts for a significant segment of the travel retail market according to industry reports and they also have a high interest in technologies including VR as indicated in the both prior research (Nielsen, 2017b) and the industry interviews in this study. Therefore, urban place marketers should consider using VR to

target this specific market and perhaps tailor specific campaigns towards them in order to enhance positive behavioural intentions such as WOM recommendation and increased purchases. Future studies are recommended to strengthen research on this market segment to explore the influence of VR retail environment cues on their behaviour in the context of this study.

10.5.2 Recommendations for Future Research

Future research topics are related to the limitations of this study. As previously noted, the findings from the interviews with urban place marketers may not be applicable to more heterogeneous contexts, which means that future research is required to build on the foundations of this research. For example, future studies could explore the topic in different national and international contexts to compare and synthesise the findings. Similarly, both the interview data and survey data were collected in Manchester and although over one third (57) of survey participants were from other countries, future studies should test the extended S-O-R model in other countries with different cultures and characteristics in order to make the model generalisable, to compare the results and determine whether any cultural differences exist. For example, as previously highlighted, research indicated that the largest travel retail market is Asia-pacific and similarly, the interviews with urban place marketers revealed that many shopping campaigns are aimed at the GCC and Asian markets given that they are heavily invested in shopping when travelling. Therefore, further testing of the VR Visitor Behaviour S-O-R Model in different contexts is likely to yield further valuable insights into this topic and verify the results. The theoretical model could also be employed to examine visitor's response to other immersive technology environments such as AR and MR in order to compare the findings to VR. This would not only enable urban place marketers to take advantage of AR, VR and MR, it could potentially lead to the development of an immersive technology visitor model, as an extension of the proposed VR Visitor Behaviour S-O-R Model.

Moreover, this study was non-place-specific, and the VR retail applications used for the data collection were a mix of computerised virtual environments and real world 360-degree footage of a specific destination, which meant that visitors' response to a specific retail place could not be measured. However, focusing on a specific place would help

build a better understanding of the relationships between VR characteristics and consumer responses (Marchiori et al., 2018). Therefore, further research should investigate the personal characteristics of VR users, such as their cognitive involvement and their attitudes toward VR and the destination(s) (Marchiori et al., 2018) or urban places presented in the VR applications. As outlined in the previous chapter, future studies are warranted exploring other independent and dependent variables using S-O-R paradigm. For example, this study developed a model of visitor behaviour exploring effects on behavioural intentions and while VR studies consistently use this outcome variable, it is important to also test the model in terms of actual purchase behaviour (Rose et al., 2012). In the e-retailing context, Rose et al., (2012) suggested that a different methodology would be required to capture the online customer experience and its outcome in real-time, rather than post hoc, which would also be applicable in the VR context. This would likely be achievable consistent with VR developments where customers can browse retail stores and shopping centres and make purchases in VR and could be achieved by employing physiological measures combined with qualitative methods as previously discussed.

Furthermore, the industry interviews indicated that the tourism and retail industries might not yet be ready to embrace these technologies. Despite one organisation planning to incorporate VR into a recent campaign and another having already ran a recent AR campaign, other participants argued that the perceived barriers still need to be overcome to encourage organisational adoption. However, participants stated that as the technology continues to rapidly develop, it will likely reach mass consumer adoption in the near future, which highlights its potential usefulness for urban place marketers. These marketers perceive AR and VR to become mainstream in the near future and argued that the challenge then is to invest and implement these technologies prior to competitors in order to gain a competitive advantage. However, as previously discussed they are challenged with organisational readiness and also limited funding, which means that seeking private investment is pivotal to facilitate these projects. Similarly, prior studies investigating firm level adoption of technologies have indicated that cost could act as a barrier to adoption (e.g. Tajudeen et al., 2018; Maduku et al., 2016; Lian et al., 2014). Cost is typically

associated with hiring professionals for planning and development, purchasing hardware and software, training of employees, and communication efforts (Hein and Rauschnabel, 2016), which relates back to the organisational readiness to implement these technologies. Therefore, further research demonstrating the potential benefits and value that immersive technologies could provide urban place marketers is required in order to encourage investment.

Finally, although the findings with urban place marketers were limited to seven interviews, the findings provided preliminary insights into their intention to adopt innovative technologies such as VR for marketing urban shopping destinations. However, VR adoption in the urban place sphere is still in its infancy, which means that further empirical evidence is required to support the growing body of literature informing urban place marketers of the potential benefits of innovative technologies such as VR as an effective marketing tool. This could promote the value of such technologies for urban place marketers and motivate industry investment. Overall, replication of this study with larger and more representative sample at each stage of data collection would increase the generalisability of the results.

References

Abarbanel, B., Bernhard, B., Singh, A.K., and Lucas, A. (2015). Impact of virtual atmospherics and functional qualities on the online gambler's experience. *Behaviour and Information Technology, 34*(10), 1005-1021.

Abbott, M., Chiang, K.P., Hwang, Y.S., and Detlev Zwick, J.P. (2000). The process of online store loyalty formation. In, S.J. Hoch, and R.J. Meyer (Eds.), *Advances in Consumer Research,* 27, Association for Consumer Research, Provo, UT (pp. 145-150).

Abou-Shouk, M., Lim, W.M., and Megicks, P. (2012). Internet adoption by travel agents: A case of Egypt. *International Journal of Tourism Research,* 15(3), 298-312. https://doi.org/10.1002/jtr.1876

Adams, J., Khan, H.I.A., and Raeside, R. (2014). *Research methods for business and social science students* (2nd ed.). Sage Publications.

Adams, D., and Tiesdell, S. (2013). *Shaping places: Urban planning, design and development.* Oxen: Routledge.

Adams, R.L. (2016). Five ways virtual reality will change the world. *Forbes.* Retrieved from https://www.forbes.com/sites/robertadams/2016/10/17/5-ways-virtual-reality-will-change-the-world/#453863252b01

Ahani, A., Rahim, N.Z.A., and Nilashi, M. (2017). Forecasting social CRM adoption in SMEs: A combined SEM-neural network method. *Computers in Human Behaviour,* 75, 560-578.

Ajzen, I. (1991). The theory of planned behaviour. *Organisation Behaviour and Human Decision Processes*, Academic Press, Inc, 179-211.

Ajzen, I. (1985). *From intentions to action: A theory of planned behaviour.* In K. Kuhl. and J. Beckman (Eds.). *Action control.* SSSP Springer Series in Social Psychology. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-69746-3_2

Ajzen, I., and Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour.* Englewood Cliffs, NJ: Prentice Hall.

Alçaniz, M., Bigné, E., and Guixeres, J. (2019). Virtual reality in marketing: A framework, review and research agenda. *Frontiers in Psychology,* https://doi.org/10.3389/fpsyg.2019.01530

Alegre, J., and Juaneda, C. (2006). Destination loyalty - Consumers' economic behaviour. *Annals of Tourism Research, 33*(3), 684-706.

Aletta, F., Kang, J., and Axelsson, Ö. (2016). Soundscape descriptors and a conceptual framework for developing predictive soundscape models. *Landscape and Urban Planning,* 149, 65-74.

Alexander, B., and Kent, A. (2017). Retail Environments. In A. Petermans, and A. Kent (Eds.) *Retail Design: Theoretical Perspectives* (pp. 62-86). Oxon: Routledge.

Alexander, A., Teller, C., and Wood, S. (2019). Augmenting the urban place brand – On the relationship between markets and town and city centres. (in press).

Allen, F., and Carletti, E. (2009). An Overview of the Crisis: Causes, Consequences and Solutions. *Global Market Integration and Financial Crisis at HKUST*, 1-45.

Allen, J. (2006). Ambient power: Berlin's Potsdamer Platz and the seductive elogic of public spaces. *Urban Studies,* 43, 441-455.

Algharabat, R., and Dennis, C. (2009). Modelling 3D product visualisation for online retail atmospherics. *Conference Proceedings.* Retrieved from https://www.semanticscholar.org/paper/Modelling-3D-product-visualisation-for-online-Algharabat-Dennis/f1f7c5a987d9db7ec4a2fd44166d91cc98757542

Algharabat, R., Alalwan, A.A., Rana, N.P., and Dwivedi, Y.K. (2017). Three-dimensional product presentation quality antecedents and their consequences for online retailers: The moderating role of virtual product experience. *Journal of Retailing and Consumer Services, 36,* 203-217.

Almeyda-Ibáñez, M., and George, B.P. (2017). Place branding in tourism: A review of theoretical approaches and management practices. *Tourism and Management Studies, 13*(4), 10-19.

Altinay, L. and Paraskevas, A. (2008) *Planning Research in Hospitality and Tourism.* Hungary: Routledge.

Alvares, E. (2016). Inside Adidas' new tech-infused store in New York City. Endgadget. Retrieved from https://guce.engadget.com/copyConsent?sessionId=3_cc-session_a319829a-12fa-4c7d-a37c-28425bb96d12andinline=falseandlang=en-US

Alvesson, I., and Kärreman, D. (2011). Qualitative research and theory development: Mystery as method. Sage Research Methods. https://dx.doi.org/10.4135/9781446287859

Anderson, B. (2014). *Encountering affect: Capacities, apparatuses, conditions.* Farnham: Ashgate.

Anteblian, B., Filser, M., and Roederer, C. (2013). Consumption experience in retail

environments: A literature review. *RAM,* 1-28.

Arnold, M. J., and Reynolds, K. E. (2003). Hedonic Shopping Motivations. *Journal of Retailing, 79*(2), 77-95.

Anttiroiko, A.V. (2014). City branding as a response to global intercity competition. *Growth and Change, 46*(2), 233-252. https://doi.org/10.1111/grow.12085

Areni, C.S., and Kim, D. (1994). The influence of in-store lighting on consumers' examination of merchandise in a wine store. *International Journal of Research in Marketing, 11*(2), 117-125. https://doi.org/10.1016/0167-8116(94)90023-X

Armstrong, G., Kotler, P., Harker, M., and Brennan, R. (2012). Marketing: An introduction. Harlow: Pearson.

Armstrong, G., and Kotler, P. (2015). Marketing: An Introduction (12th ed.). Harlow: Pearson.

Ashworth, G., and Page, S.J. (2011). Urban tourism research: Recent progress and current paradoxes. *Tourism Management, 32*(1), 1-15. https://doi.org/10.1016/j.tourman.2010.02.002

Ashworth, G. (1993). Marketing of places: What are we doing? In. G. Ave and F. Corsico (Eds.). *Urban Marketing in Europe* (pp. 643-649). Turin: Torino Incontra.

Ashworth, G.J., and Voogd, G. (1990). Can places be sold for tourism? In. Ashworth, G., and Goodall, B. (Eds.), *Marketing Tourism Places* (pp.1-16). London: Routledge.

Ashworth, G.J. (2003). Urban tourism: Still an imbalance in attention? In C. Cooper (Ed.). *Classic Reviews in Tourism* (pp. 143-163). Clevedon: Channel View.

American Psychology Association. (APA). (2002). *Glossary of psychological terms.* Retrieved from http://www.apa.org/research/action/glossary.aspx

ATCM. (1997). *Developing Structures to Deliver Town Centre Management.* London: ATCM.

ATCM. (1999). *The directory of managed towns.* London: ATCM.

ATCM. (2016). *What is TCM? Association of Town and City Management.* Retrieved from https://www.atcm.org/about_atcm/what_is_tcm

Babin, B.J., Darden, W.R., and Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *Journal of Consumer Research, 20*(4), 644-656.

Bacon, L. D. (1999). Using LISREL and PLS to Measure Customer Satisfaction, Sawtooth Software. *Conference Proceedings, La Jolla, California, Feb 2-5*, 305-306.

Bagozzi, R. P., and Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 1*6(1), 74–94.

Baker, T. L. (1994). *Doing Social Research* (2nd ed.). New York: McGraw-Hill Inc.

Baker, J., Grewal, D., and Parasuraman, A. (1994). The influence of store environment on quality interfaces and store image. *Journal of Academy of Marketing Science, 22,* 328-339.

Baker, S.E., and Edwards, R. (2012). How many qualitative interviews is enough. Discussion Paper. *National Centre for Research Methods. (Unpublished).* Retrieved from http://eprints.ncrm.ac.uk/2273/

Baker, M. J., and Cameron, E. (2008). Critical success factors in destination marketing. *Tourism and Hospitality Research, 8*(2), 79-97.

Baker, J., and Wakefield, K. L. (2011). How consumer shopping orientation influences perceived crowding, excitement, and stress at the mall. *Journal of the Academy of Marketing Science*, 1-16.

Baker, J., Levy, M., and Grewal, D. (1992). An experimental approach to making retail store environmental decisions. *Journal of Retailing, 68*(4), 445-460.

Baker, J. (1986). The role of the environment in marketing services: The consumer perspective. In J.A. Czepeil, C.A. Congrarn, and J. Shanahan (Eds.), *The service challenge: Integrating for competitive* advantage (pp. 79-84). Chicago, IL: American Marketing Association.

Bakker, I., van der Voordt, T., Vink, P., and de Boon, J. (2014). Pleasure, arousal, dominance: Mehrabian and Russell revisited. *Current Psychology*, 1-17.

Balasubramanian, S., Peterson, R.A., and Jarvenpaa, S.L. (2002). Exploring the implications of m-commerce for marketing and marketing. *Journal of the Academy of Marketing Science, 30*(348). https://doi.org/10.1177/009207002236910

Balakrishnan, M.S. (2009). Strategic marketing of destinations: A framework. European *Journal of Marketing, 3*(5-6), 611-629.

Ballantine, P.W., Parsons, A., and Comeskey, K. (2015). A conceptual model of the holistic effects of atmospheric cues in fashion retailing. *International Journal of Retail and Distribution Management, 43*(6), 503-517.

Ballantine, P.W., Jack, R., and Parsons, A.G. (2010). Atmospheric cues and their effect on the hedonic retail experience. *International Journal of Retail and Distribution Management,* 38(8), 641-653.

Ballantine, P.W. (2005). Effects of interactivity and product information on consumer satisfaction in an online retail setting. *International Journal of Retail and Distribution Management, 33*(6), 461-471.

Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.). *Annals of child development, Six theories of child development (6th Ed.)* (pp. 1-60). Greenwich, CT: JAI Press.

Bangcuyo, R.G., Smith, K.J., Zumach, J.L., Pierce, A.M., Guttman, G.A., and Simons, C.T. (2015). The use of immersive technologies to improve consumer testing: The role of ecological validity, context and engagement in evaluating coffee. *Food Quality and Preference, 41,* 84-95.

Baños, R.M., Botella, C., Acañiz, M., Liaño, V., and Guerreo, B.B. (2004). Immersion and emotion: Their impact on the sense of presence. *CyberPsychology and Behaviour, 7*(6), 734-741. https://doi.org/10.1089/cpb.2004.7.734

Baños, R. M., Botella, C., Alcañiz, M., Liaño, V., Guerrero, B., and Rey, B. (2004). Immersion and emotion: Their impact on the sense of presence. *CyberPsychology and Behaviour, 7,* 734–741.

Barátová, A., Hager, J., Mayrhofer, T., and McFee, A. (2018). Virtual reality and destination image formation. In B. Neuhofer. and C. Maurer (Eds.), *ISCONTOUR 2018 Tourism Research Perspectives: Proceedings of the International Student Conference in Tourism Research* (pp. 52-63).

Barnett, V. (2002). *Sample survey principles and methods* (3rd ed.). Chichester: Wiley.

Baron, S., Harris, K., and Hilton, T. (2009). *Services Marketing: Texts and Cases.* UK: Palgrave MacMillan.

Bass, B., Avolio, B., Jung, D., and Berson, Y. (2003). Predicting unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology, 88*(2), 207-218.

Bateson, C. D., Shaw, L. L., and Oleson, K. C. (1992). Differentiating affect mood and emotion. Toward functionally based conceptual distinctions. In M. Clark (Ed.), *Emotion Review of Personality and Social Psychology* (Vol. 13) (pp. 294-326). Newbury Park: Sage.

Baun, E. (2008). *City marketing: Towards an integrated approach*. Erasmus University Rotterdam, Erasmus Research Institute of Management.

Beck, L., and Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behaviour. *Journal of Research in Personality, 25*, 285-301.

Beck, M., and Crié, D. (2018). I virtually try it…I want it! Virtual fitting room: A tool to increase on-line and off-line exploratory behaviour patronage and purchase intentions. *Journal of Retailing and Consumer Services, 40,* 279-286. https://doi.org/10.1016/j.jretconser.2016.08.006

Bellini, S., Cardinali, M.G., and Grandi, B. (2017). A structural equation model of impulse buying behaviour in grocery retailing. *Journal of Retailing and Consumer Services, 36,* 164-171.

Bellizzi, J.A., and Hite, R. E. (1992). Environmental Colour, Consumer Feelings, and Purchase Likelihood. *Psychology and Marketing, 9*(5), 347-363

Ben-Dalia, S., Kreiner, N. C., and Churchman, A. (2013). Evaluation of an urban tourism destination. *Tourism Geographies: An International Journal of Space, Place and Environment, 15*(2), 233-249.

Benur, A.M., and Bramwell, B. (2015). Tourism product development and product diversification in destinations. *Tourism Management, 50,* 213-224.

Berg, L.P., and Vance, J.M. (2017). Industry use of virtual reality in product design and manufacturing: A survey. *Virtual Reality, 21*(1), 1-17.

Berkhout, J.J., Helmich, E., and Tuenissen, P.W. (2016). The complex relationship between student, context and learning outcomes. *Medical Education, 50*(2), 164-166. https://doi.org/10.1111/medu.12950

Bertaux, D. (1981). From the life-history approach to the transformation of sociological practice. In D. Bertaux (Ed.), *Biography and society: The life history approach in the social sciences* (pp.29-45). London: Sage.

Bhandari, U., Neben, T., Chang, K., and Chua, W.Y. (2017). Effects of interface design factors on affective responses and quality evaluations in mobile applications. *Computers in Human Behaviour, 72C,* 525-534. https://dx.doi.org/10.1016/j.chb.2017.02.044

Bigné, J. E., Andreu, L., and Gnoth, J. (2005). The theme park experience: An analysis of pleasure, arousal, and satisfaction. *Tourism Management, 26*, 833-844.

Bigné, E., Llinares, C., and Torrecilla, C. (2016). Elapsed time on first buying triggers brand choices within a category: A virtual reality-based study. *Journal of Business Research, 69*, 1423-1427.

Biocca, F. (1997). Cyborg's dilemma: Progressive embodiment in virtual environments. *Journal of Computer-Mediated Communication, 3*(2). Retrieved from http://www.ascusc.org/jcmc/vol3/issue2/biocca2.html

Bitner, M. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of Marketing, 56*(2), 57-71.

Blackwell, R.D., Engel, J.F., and Miniard, P.W. (2006). *Consumer behaviour* (10th ed.). International Thomson Publishing: Mason, Ohio.

Blaikie, N. (2004). Epistemology. In M.S. Lewis-Beck. A. Bryman. and T.F. Liao (Eds.), *The SAGE Encyclopaedia of Social Science Research Methods.* Sage Knowledge. http://dx.doi.org/10.4135/9781412950589.n281

Blum, A. (2017). The future of virtual reality in retail. Retrieved from https://www.iflexion.com/blog/the-future-of-vr-in-retail.

Boellstorff, T., Nardi, B., Pearce, D., and Taylor, T.L. (2012). *Ethnography and virtual worlds: A Handbook of Methods,* Princeton: Princeton University Press.

Bock, K. (2015). The changing nature of city tourism and its possible implications for the future of cities. *European Journal of Futures Research, 3*(20), 1-8.

Bonetti, F., Warnaby, G., and Quinn, L. (2018). Augmented reality and virtual reality in physical and online retailing: A review, synthesis and research agenda. In T. Jung. and M. tom Dieck (Eds.), *Augmented reality and virtual reality.* Progress in IS (pp.119-132). Cham: Springer.

Booms, B.H., and Bitner, M.J. (1981). *Marketing strategies and organisational structures for service firms marketing of services.* Chicago: American Marketing Association, (pp. 47-51).

Bordelon, B.M., Jafarnejad, F., and Williams, K. (2018). Exploring millennials experiences using virtual reality for travel planning: A qualitative study. *Tourism Travel and Research Association: Advancing Tourism Research Globally 2018: International Conference.*

Bornhorst, T., Ritchie, J.R.B. and Sheehan, L. (2010) Determinants of Tourism Success for DMOs and Destinations: An Empirical Examination of Stakeholders' Perspectives. *Tourism Management, 31*(5), 572-589. http://dx.doi.org/10.1016/j.tourman.2009.06.008

Bouchard S., St-Jacques J., Robillard G., and Renaud P. (2008). Anxiety increases the feeling of presence in virtual reality. *Presence, 17*, 376–391.

Burtenshaw, D., Bateman, M. and Ashworth, G.J. (1991) *The European City.* London: David Fulton Publishers.

Buxbaum, O. (2016). The S-O-R Model. *Key Insights into Basic Mechanisms of Mental Activity*, 7-9.

Boyatzis, R.E. (1998). *Transforming qualitative information: Thematic analysis and code development.* Thousand Oaks, CA: Sage Publications.

Bradford, K.D., and Desrochers, D.M. (2009). The use of scents to influence consumers: The sense of using scents of make cents. *Journal of Business Ethics, 90*(2), 141-153.

Brakus, J. J., Schmitt, B. H., and Zarantonello, L. (2009). Brand experience: What is it? How is it measured? Does it affect loyalty? *Journal of Marketing, 73*, 52-68.

Bramwell, B., and Rawding, L. (1996). Tourism marketing images of industrial cities. *Annals of Tourism Research, 23*(1), 201-221.

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. Qualitative *Research in Psychology, 3*(2), 77-101.

Brave, S., and Nass, C. (2002). Emotion in human-computer interaction. In J. Jacko and A. Sears (Eds.), *Handbook of human-computer interaction* (pp. 251-271). Hillsdale, NJ: Lawrence Erlbaum Associates.

Brooks, F.P. (1999). What's retail about virtual reality? *IEEE Computer Graphics and Applications,* 16-27.

Brown, A. (2011). Advancing the concepts of soundscapes and soundscape planning. *Acoustics, 115*(17), 4-6.

Brown, A., Gjestlan, T., Dubois, D. (2016). Acoustics environments and soundscapes. In J. Kang. and B. Schulte-Fortkamp. (Eds.), *Soundscape built environment* (pp. 1-16). CRC Press: Boca Raton.

Brown, T.J., Barry, T.E., Dacin, P.A., and Gunst, R.F. (2005). Spreading the word: Investigating antecedents of consumers' positive word-of-mouth intentions and

behaviours in a retailing context. *Journal of the Academy of Marketing Science, 33*(123). https://doi.org/10.1177/0092070304268417

Bruner, G. C., and Kumar, A. (2005), Explaining Consumer Acceptance of Handheld Internet Devices. *Journal of Business Research, 58,* 533- 558.

Bryman, A. (1989). *Research methods and organisation studies (Contemporary Social Research).* Routledge: London.

Burke, R.R. (1996). Virtual shopping: Breakthrough in marketing research. *The Journal of Product Innovation Management, 6*(13), 558-559.

Byond. (2016). A Guide to tethered and untethered VR headsets. Retrieved from http://www.byondvr.com/guide-to-tethered-untethered-vr-he

Caldwell, N., and Freire, J. (2004). The difference between branding a country, a region and a city: Applying the brand box model. *Journal of Brand Management, 12*(1), 50-61.

Campbell, D.E., & Wright, R.T. (2008). Shut-up I don't care: Understanding the role of relevance and interactivity on customer attitudes toward repetitive online advertising. *Journal of Electronic Commerce Research,* 9(1), 62-76.

Canniford, R., Riach, K., and Hill, T. (2018). Nosenography: How smell constitutes meaning, identity and temporal experience in spatial assemblages. *Marketing Theory, 18*(2), 234-248. https://dx.doi.org/10.1177/1470593117732462

Carey, J. W. (1993). Linking qualitative and quantitative methods: Integrating cultural factors into public health. *Qualitative Health Research, 3*, 298-318.

Carmona, M., Tiesdell, S., Heath, T., and Oc, T. (2010). *Public places - Urban spaces: The dimensions of urban design* (2nd ed.). Oxford: Elsevier.

Campanelli, M. (2004). That's Rich. *Entrepreneur.* Retrieved from http://www.entrepreneur.com/article/0,4621,315222,00.html

Carrillo, F. (2004). Capital cities: A taxonomy of capital accounts of knowledge cities. *Journal of Knowledge Management, 8*(5), 28-46.

Carù, A., and Cova, B. (2006). How to facilitate immersion in a consumption experience: Appropriation operations and service elements. *Journal of Consumer Behaviour, 5*(1), 4-14.

Casey, E. (1996). How to get from space to place in a fairly short sketch of time: Phenomenological Prolegomena. In S. Feld. and K.H. Basso (Eds.), *Senses of Place.* Santa Fe NM: School of American Research Press.

Castello, L. (2006). City and time and places: Bridging the concept of place to urban conservation planning. *City and Time, 2*(1): 59-69.

Castañeda, J.A., Muñoz-Leiva, F., and Luque, T. 92007). Web acceptance model (WAM): Moderating effects of user experience. *Information and Management, 44*(4), 384-396. https://dx.doi.org/10.1016/j.im.2007.02.003

CH1ChesterBID. (2017). *Annual Review 2016/17.* Chester: CH1ChesterBID.

Chamberlain, L., and Broderick, J. A. (2007). The application of physiological observation methods to emotion research. *Qualitative Market Research: An International Journal, 10*(2), 199-216.

Chandra, S., and Kumar, K.N. (2018). Exploring factors influencing organizational adoption of augmented reality in e-commerce: Empirical analysis using technology-organization-environment model. *Journal of Electronic Commerce Research, 19*(3), 237-265.

Chang, T.C. (1997). From “instant Asia” to “multi-faceted jewel”: Urban imaging strategies and tourism development in Singapore. *Urban Geography, 18*(6), 542-562.

Chang, H.H., and Chen, S.W. (2009). Consumer perception of interface quality, security, and loyalty in electronic commerce. *Information and Management, 46*(7), 411-417.

Chang, S. H., Chih, W. H., Liou, D. K., and Hwang, L. R. (2014). The Influence of Web Aesthetics on Customers’ PAD. *Computers in Human Behaviour*, (36), 168–178.

Chao, P. (2008). Exploring the nature of the relationships between service quality and customer loyalty: An attribute-level analysis. *The Service Industries Journal, 28*(1), 95-116. https://doi.org/10.1080/02642060701725610

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis.* Thousand Oaks, CA: Sage.

Chatzoglou, P., and Chatzoudes, D. (2016). Factors affecting e-business adoption in SMEs: An empirical research. *Journal of Enterprise Information Management, 29*(3), 327-358.

Chaudhuri, A., Aboulnasr, K., and Ligas, M. (2010). Emotional responses on initial exposure to a hedonic or utilitarian description of a radical innovation. *Journal of Marketing Theory and Practice, 18,* 339-359.

Chebat, J.C., Chebat, C.G., and Vaillant, D. (2001). Environmental background music and in-store selling. *Journal of Business Research, 54*(2), 115-123.

Chen, Y. (2006). Olfactory display: Development and application in virtual therapy. Paper presented at the Artificial Reality and Telexistence-Workshops, 2006. ICAT’06. In *Proceedings of the 16th International Conference.*

Chen, C.C., and Yao, J.W. (2018). What drives impulse buying behaviours in a mobile auction? The perspective of the Stimulus-Organism-Response model. *Telematics and Informatics, 35*(5), 1249-1262. https://doi.org/10.1016/j.tele.2018.02.007

Cheng, E.W.L. (2001). SEM being more effective than multiple regression in parsimonious model testing for management development research. *Journal of Management Development, 20*(7), 650-667.

Chen, S.J., and Chang, T.Z. (2003). A descriptive model of online shopping process: Some empirical results. *International Journal of Service Industry Management, 14*(5), 556-569. https://doi.org/10.1108/09564230310500228

Cheng, E.W.L. (2001). SEM being more effective than multiple regression in parsimonious model testing for management development research. *Journal of Management Development, 20*(7), 650-667. https://doi.org/10.1108/02621710110400564

Cheng, S., and Cho, V. (2011). An integrated model of employees' behaviour intention toward innovative information and communication technologies in travel agencies. *Journal of Hospitality and Tourism Research, 35*(4), 488-510.

Chen, H. T., and Lin, T. W. (2012). How a 3D tour itinerary promotion affect consumers' intention to purchase a tour product? *Information Technology Journal, 11*(10), 1357–1368.

Cheong, R. (1995). The virtual threat to travel and tourism. *Tourism Management, 16*(6), 417-422.

Cheung, C.M.K., Chan, G.W.W., and Limayen, M. (2005). A critical review of online consumer behaviour: Empirical research. *Journal of Electronic Commerce in Organisations, 3*(4), 1-19.

Chhonker, M., Verma, D., Kar, A., and Grover, P. (2018). M-commerce technology adoption. *The Bottom Line, 31*(3-4), 208-233. https://doi.org/10.1108/BL-04-2018-0020

Childers, T.L., Carr, C.L., Peck, J., and Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behaviour. *Journal of Retailing, 77,* 417-424.

Chin, W.W., Marcolin, B.L., and Newsted, P.R. (1996). A partial least squares latent variable modelling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. *Paper presented at the 17th International Conference on Information Systems,* Cleveland, Ohio.

Cho, Y.H., Wang, Y., and Fesenmaier, D.R. (2002). Searching for experiences. *Journal of Travel and Tourism Marketing, 12*(4), 1-17.

Cho, Y.H., Wang, Y., and Fesenmaier, D.R. (2002). Searching for experiences. *Journal of Travel and Tourism Marketing, 12*(4), 1-17.

Choi, Y.K., Miracle, G.E., and Biocca, F. (2001). The effects of andromorphic agents on advertising effectiveness and the mediating role of presence. *Journal of Interactive Marketing, 2*(1), 19-32.

Choi, M. J., Heo, C. Y., and Law, R. (2016). Progress in Shopping Tourism. *Journal of Travel and Tourism Marketing, 33*, S1-S24.

Choi, H., and Kandampully, J. (2018). The effect of atmosphere on customer engagement in upscale hotels: An application of S-O-R paradigm. *International Journal of Hospitality Management, 77.*

Chuttur, M. (2009). Overview of the technology acceptance model: Origins, developments and future directions. *Sprouts: Working Papers on Information Systems, 9*(37), 1-21.

Ciriković, E. (2014). Marketing mix in tourism. *Academic Journal of Interdisciplinary Studies, 3*(2), 111-115.

Clark, J. (2017). Why should you care about virtual reality in marketing? Retrieved from https://www.forbes.com/sites/forbesagencycouncil/2017/10/02/why-should-you-care-about-virtual-reality-in-marketing/#4d51569d64c4

Colomo-Palacios, R., Lumbreras, C.C., Soto-Acosta, P., and García-Crespo, A. (2013). Decisions in software development projects management. An exploratory study. *Behaviour and Information Technology, 32*(11), 1077-1085. https://doi.org/10.1080/0144929X.2011.630414

Connelly, L.M. (2008). Pilot studies. *MedSurg Nursing, 17*(6), 411-412.

Conway, J., and Lance, C. (2010). What Reviewers Should Expect from Authors Regarding Common Method Bias in Organizational Research. *Journal of Business and Psychology, 35*(3), 325-334. https://doi.org/10.1007/s10869-010-9181-6

Cooper, C., Fletcher, J., Fyall, A., Gilbert, D., and Wanhill, S. (2008). *Tourism: Principles and Practice.* Essex: Pearson Education Limited.

Corbetta, P. (2003). *Social Research: Theory Methods and Techniques.* London: SAGE Publications Ltd.

Corbin, A. (1986). *The foul and the fragrant: Odour and the French Social Imagination.* Cambridge, MA: Harvard University Press.

Cornelius, B., Natter, M., and Faure, C. (2010). How storefront displays influence retail store image. *Journal of Retailing and Consumer Services, 17*(2), 143-151.

Correia, A., Oliveira, C., and Pereira, R. (2017). From Emotions to Place Attachment. In A. Correia. M. Kozak. J. Gnoth. and A. Fyall. (Eds.), *Co-creation and well-being in tourism* (pp. 163-174). Switzerland: Springer.

Cotterill, E., Grail, J., Mitton, C., Ntounis, N., Parker, C., Quin, S., Smith, D., Steadman, C., and Warnaby, G. (2019). The BID Foundation: A state-of-the-art review of business improvement districts in the UK: Setting the agenda for policy, practice and research. Institute of Place Management: Commissioned by The BID Foundation. *Manchester Metropolitan University.*

Coyle, J.R., and Thorson, E. (2001). The effects of progressive levels of interactivity and vividness in web marketing sites. *Journal of Advertising, 30*(3), 65-77. https://doi.org/10.1080/00913367.2001.10673646

Cowan, K., Spielmann, N., Horn, E., and Griffart, C. (2017). Perception is reality: How luxury brands' implementation of telepresence and haptic factors in digital environments affects brand evaluations. *Proceedings of The Global Brand Conference, Sweden, Kalmar.*

Cowan, K., and Ketron, S. (2019). A dual model of product involvement for effective virtual reality: The roles of imagination, co-creation, telepresence, and interactivity. *Journal of Business Research, 100,* 483-492.

Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing among Five Approaches* (3rd ed.). Thousand Oaks, CA: SAGE.

Creswell, T. (2004). *Place: A short introduction.* Carlton: Blackwell Publishing.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA, US: Sage Publications, Inc.

Creswell, J.W. (1994). *Research Design: Qualitative and Quantitative Approaches.* Thousand Oaks, CA: Sage.

Creswell, J.W., and Clark, V.L.P. (2006*). Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage.

Creswell, J.W. (2009). *Research design, qualitative, quantitative, and mixed methods research.* Thousand Oaks, CA: Sage.

Croasmun, J.T., and Ostrom, L. (2011). Using Likert-Type scales in social sciences. *Journal of Adult Education, 40*(1), 19-22.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. London: SAGE Publications Inc.

Csaba, F. (2005). The application of branding to non-profit organisations and places. In M. Schultz. Y. Antorini. and F. Csaba (Eds.), *Corporate branding* (Chapter 6). Copenhagen Business School Press: Kage.

Cuny, C., Fornerino, M., and Helme-Guizon, A. (2015). Can music improve e-behavioural intentions by enhancing consumers' immersion and presence? *Information and Management, 52*(8), 1025-1034.

Cummins, S., Peltier, J.W., and Dixon, A. (2016). Omni-channel research framework in the context of personal selling and sales management. *Journal of Research in Interactive Marketing, 10*(1), 2-16.

Cyr, D., Hassanein, K., Head, M., and Ivanov, A. (2007). The role of social presence in establishing loyalty in e-service environments. *Interacting with Computers, 19,* 43-56.

Cyr, D., and Bonanni, C. (2005). Gender and website design in e-business. *International Journal of Electronic Business, 3*(6), 656-582.

Dad, A.M., Rehman, A.A., Kear, A., and Davies, B.J. (2018). The effect of music on shoppers' shopping behaviour in virtual reality retail stores: Mediation analysis. *International Journal of Advanced Computer Science and Applications, 9*(1), 135-145.

Dad, A.M., Davies, B.J., and Rehman, A.A. (2016). 3D servicescape model: Atmospheric qualities of virtual reality retailing. *International Journal of Advanced Computer Science and Applications, 7*(2), 25-38.

Daft, R.L. and Lengel, R.H. (1986) Organizational Information Requirements. Media Richness and Structural Design. *Management Science, 32*, 554-571.

Dailey, L. (2004). Navigational web atmospherics: Explaining the influence of restrictive navigation cues. *Journal of Business Research, 57*(7), 795-803.

Daniels, P., and Bryson, J. (2002). Manufacturing services and service manufacturing knowledge-based cities and changing form of production. *Urban Studies, 39*(5-6), 977-991.

Das, G., and Varshneya, G. (2017). Consumer emotions: Determinants and outcomes in a shopping mall. *Journal of Retailing and Consumer Services, 38*(C), 177-185.

Daskalopoulou, I., and Petrou, A. (2009). Urban Tourism Competitiveness: Networks and the Regional Asset Base. *Urban Studies, 46*(4), 779-801.

David, F. M., and Yardley, L. (2004). *Research Methods for Clinical and Health Psychology.* London: SAGE.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology, 22*(14), 1111-1132.

Davies, R.L., and Bennison, D.J. (1978). Retailing in the city centre: The characters of shopping streets. *Tijdschrift voor Economische en Sociale Geograffe, 69*(5), 270-285.

Davis, L.L. (1984). Clothing and human behaviour: A review. *Home Economics Research, 12*(3), 325-339. https://doi.org/10.1177/1077727X8401200308

Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace1. *Journal of Applied Social Psychology, 22*(14), 1111-1132.

Davison, A.C., and Hinkley, D.V. (1997). *Bootstrap Methods and their Application.* Cambridge University Press. https://doi.org/10.1017/CBO9780511802843

Deffner, A.M., and Liouris, C. (2005). City marketing – A significant planning tool for urban development in a globalised economy. *ERSA Conference Papers, European Regional Science Association.*

Degen, M.M., and Rose, G. (2012). The sensory experiencing of urban design: The walking and perceptual memory. *Urban Studies, 49*(15), 3271-3287.

Della Porta, E. and Keating, M. (2008). *Approaches in Methodologies in the Social Sciences,* Cambridge University Press: Cambridge.

De Nisco, A., and Warnaby, G. (2013). Shopping in downtown: The effect of urban environment on service quality perception and behavioural intentions. *International Journal of Retail and Distribution Management, 41*(9), 654-670.

De Nisco, A., and Warnaby, G. (2014). Urban design and tenant variety influences on consumers' emotions and approach behaviour. *Journal of Business Research, 67*, 211-217.

Dennis, C., Michon, R., Brakus, J., Newman, A., and Alamanos, E. (2012). New insights into the impact of digital signage as a retail atmospheric tool. *Journal of Consumer Behaviour, 11*, 454-466.

Dennis, C., French, T., Pantano, E., Gerlach, S., and Merrilees, B. (2004). *E-retailing.* Abingdon: Routledge.

Dennis, C., Harris, I., and Shandhu, B. (2002). From bricks and clicks: Understanding the e-consumer. *Qualitative Market Research: An International Journal, 5*(4), 281-290.

De Noronha, I., Coca-Stefankiak, A., and Morrison, A.M. (2017). Confused branding? An exploratory study of place branding practices among place management professionals. *Cities, 66,* 91-98.

Department of the Environment. (1993). *Planning Policy Guidance Note 6: Town Centres and Retail Development.* London: HMSO.

Diemer, J., Alpers, G.W., Peperkorn, H.M., Shiban, Y., and Muhlberger, A. (2015). The impact of perception and presence on emotional reactions: a review of research in virtual reality. *Frontiers in Psychology, 30*(6), 26. https://doi.org/10.3389/fpsyg.2015.00026

Dinh, H., Walker, N., Hodges, L., Song, C., and Kobayashi, A. (1999). Evaluating the importance of multi-sensory input on memory and the sense of presence in virtual environments. *Paper presented at the virtual reality: 1999. Proceedings, IEEE.*

Di Serio, A., Ibáñez, M.B., and Kloos, C.D. (2013). Impact of an augmented reality system on students' motivation for a visual art course. *Computers in Education, 68,* 586-596.

Disztinger, P., Schlogl, S., and Groth, A. (2017). Technology acceptance of virtual reality for travel planning. In R. Schegg, and B. Stangl. (Eds.), *Information and Communication Technologies in Tourism 2017* (pp. 255-268). Rome, Italy: Springer, Cham. https://doi.org/10.1007/978-3-319-51168-9_19

Dobrowolski, P., Pochwatko, G., Skorko, M., and Bielecki, M. (2014). The effects of virtual experience on attitudes toward real brands. *CyberPsychology, Behaviour, and Social Networking, 17*(2), 125-128.

Dodds, W.B. (1991). In search of value: How price and store name information influence buyers' product perceptions. Journal of Services Marketing, 5(3), 27-36.

Dörnyei, Z. (2007). *Research methods in applied linguistics.* New York: Oxford University Press.

Domina, T., Lee, S.E., and MacGillivray, M. (2012). Understanding factors affecting consumer intention to shop in a virtual world. *Journal of Retailing and Consumer Services, 19*(6), 613-620. https://doi.org/10.1016/j.jretconser.2012.08.001

Donovan, R., and Rossiter, J. (1982). Store atmosphere: an environmental psychology approach. *Journal of Retailing, 75*(2), 34. https://doi.org/10.1016/0022-4359(94)90037-X

Doolin, B., Dillon, S., Thompson, F., and Corner, J.L. (2005). Perceived risk, the Internet shopping experience and online purchasing behaviour: A New Zealand perspective. *Journal of Global Information Management, 13*(2), 66-88.

Doyle, S. (2004). Urban regeneration in New York: Gardens and grocers. International *Journal of Retail Distribution Management, 32*(12), 582-586.

Dredge, D. (2016a). Are DMOs on a path to redundancy? *Tourism Recreation Research, 41*(30), 348-353.

Dredge, D. (2016b). DMOs: Where to? *Tourism Recreation Research, 41*(3), 362.

Dubois, D. (2000). Categories as acts of meaning: The case of categories in olfaction and audition. *Cognitive Science Quarterly, 1*(1), 35-68.

Dudovskiy, J. (2016). The ultimate guide to writing a dissertation in business studies: A step-by-step assistance. *eBook Journal of Mixed Methods Research, 4*(1),6–16.

Dunne, G., Flanagan, S., and Buckley, J. (2010). Towards an understanding of international city break travel. *International Journal of Tourism Research, 12*, 409-417.

Durna, U., Dedeoglu, B., and Balikçioglu, S. (2015). The role of servicescape and image perceptions of customers on behavioural intentions in the hotel industry. *International Journal of Contemporary Hospitality Management, 27*(7), 1728-1748. https://doi-org.mmu.idm.oclc.org/10.1108/IJCHM-04-2014-0173

Dwyer, L., and Kim, C. (2003). Destination Competitiveness: Determinants and Indicators. *Current Issues in Tourism, 6*(5), 369-414.

Dwyer, L., Gill, A., and Seetaram, N. (2012). *Handbook of research methods in tourism: Quantitative and qualitative approaches.* Cheltenham, UK: Edward Elgar Publishing.

Echevarria Sánchez, G.M., Van Renterghem, T., Sun, K., De Coensel, B., and Botteldooren, D. (2017). Using virtual reality for assessing the role of noise in the audio0visual design of an urban public space. *Landscape and Urban Planning, 167,* 98-107.

Edwards, S., and Shackley, M. (1992). Measuring the effectiveness of retail window display as an element of the marketing mix. *International Journal of Advertising, 11*, 193-202.

Edwards, D., Griffins, T., and Hayllar, B. (2008). Urban tourism research: developing an agenda. *Annals of Tourism Research, 35*(4), 1032-1052.

Efron, B., and Tibshirani, R. (1986). Bootstrap Methods for Standard Errors, Confidence Intervals, and Other Measures of Statistical Accuracy. *Statist Sci, 1*(1), 54-75.

Eisenbeiss, M., Blechschmidt, B., Backhaus, K., and Fruend, P.A. (2012). The (real) world is not enough: Motivational drivers and user behaviour in virtual worlds. *Journal of Interactive Marketing, 26*(1), 4-20.

El Hedhli, K., and Chebat, J. (2009). Developing and validating a psychometric shopper-based mall equity measure. *Journal of Business Research, 62*(6), 581-587.

Elmqvist, T. (2013). Designing the urban soundscape. Retrieved from https://www.thenatureofcities.com/2013/08/25/designing-the-urban-soundscape/.

Engen, T. (1991). *Odour sensation and memory.* New York, NY, England: Praeger Publishers.

Eriksson, P., and Kovalainen, A. (2008). *Qualitative methods in business research.* London: Sage.

Eroglu, S.A., Machleit, K.A., and Davies, L. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research, 54,* 177-184.

Eroglu, S.A., Machleit, K.A., and Davis, L.M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology and Marketing, 20*(2), 139-150. https://doi.org/10.1002/mar.10064

Estevao, C., Ferreira, J., and Nunes, S. (2015). Determinants of tourism destination competitiveness: A SEM approach. In A. Correia. J. Gnoth. M. Kozak. and A. Fyall (Eds.), *Marketing Places and Spaces (Advances in Culture, Tourism and Hospitality Research* (Vol. 10) (pp. 121-139). Emerald Publishing Group Limited.

Ettis, S.A. (2017). Examining the relationships between online store atmospheric colour, flow experience and consumer behaviour. *Journal of Retailing and Consumer Services, 37,* 43-55.

Fagan, M., Kilmon, C., and Pandley. (2012). Exploring the adoption of a virtual reality simulation: The role of perceived ease of use, perceived usefulness and personal innovativeness. *Campus-Wide Information Systems, 29*(2), 117-127.

Falk, M., and Katz-Gerro, T. (2017). Modelling travel decisions: Urban exploration, cultural immersion, or both? *Journal of Travel and Tourism Marketing, 34*(3), 369-382.

Fang, H., Zhang, J., Sensoy, M., and Magnenat-Thalmann, N. (2014). Reputation mechanism for e-commerce in virtual reality environments. *Electronic Commerce Research and Applications, 13*(6), 409-422.

Farah, M.F., Ramadam, Z.B., and Harb, D.H. (2019). The examination of virtual reality at the intersection of consumer experience, shopping journey and physical retailing. *Journal of Retailing and Consumer Services, 48,* 136-143.

Fast-Berglund, A., Gong, L., and Li, D. (2018). Testing and validating extended reality (xR) technologies manufacturing. 8th Swedish Production Symposium, SPS 2018, 16-18 May 2018, Stockholm, Sweden, 25, 31-38.

Fauzi, A.H., and Gozali, A.A. (2015). Virtual reality to promote tourism in Indonesia. *Jurnal Sistem Komputer, 5*(2), 47-50.

Fernandes, T., and Cruz, M. (2016). Dimensions and outcomes of experience quality in tourism: The case of Port wine cellars. *Journal of Retailing and Consumer Services,* 371-379.

Ferreira, D.C.S., and Oliveira-Castro, J.M. (2011). Effects of background music on consumer behaviour: Behavioural account of the consumer setting. *The Services Industries Journal, 31*(15), 2571-2585.

Filion, P., Hoernig, H., Bunting, T., and Sands, G. (2004). The successful few: Healthy downtowns of small metropolitan regions. *Journal of the American Planning Association, 70*(3), 328-343. https://doi.org/10.1080/01944360408976382

Findlay, A., and Sparks, L. (2008). Weaving new retail and consumer landscapes in the Scottish borders. *Journal of Rural Studies, 24*(1), 86-97.

Fiore, A.M., Kim, J., and Lee, H.H. (2005). Effect of image interactivity technology on consumer responses toward the online retailer. *Journal of Interactive Marketing,* 30-53.

Fiore, A. and Jin, H. (2003). Influence of image interactivity on approach responses towards an online retailer. *Internet Research, 13*(1), 38-48. https://doi-org.mmu.idm.oclc.org/10.1108/10662240310458369

Fishbein, M., and Ajzen, I. (1975). *Belief, attitude, intention and behaviour: an introduction to theory and research.* Reading, MA: Addison-Wesley.

Flavián, C., Ibáñez-Sánchez, and Orús, C. (2019). Impact of virtual, augmented and mixed reality technologies on the consumer experience. *Journal of Business Research, 100*, 547-560.

Floh, A., and Madlberger, M. (2013). The role of atmospherics cues in online impulse-buying behaviour. *Electronic Research and Applications, 12*(6), 425-439. http://doi.org/10.1016/j.elerap.2013.06.001

Florida, R. (2002). *The rise of the creative class, and how it's transforming work, leisure community and everyday life.* New York, NY: Basic Books.

Florida, R. (2004). *The rise of the creative class.* Melbourne: Pluto Press.

Fontanesi, L., and Renaud, P. (2014). Sexual presence: Toward a model inspired by evolutionary psychology. *New Ideas in Psychology,* 33, 1-7.

Fornell, C., and Larker, D. (2981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research,* 18, 39-50.

Forsberg, H., Medway, D., and Warnaby, G. (1999). Town centre management by co-operation. Evidence from Sweden. *Cities, 16*(5), 315-322.

Fox, J., Christy, K.R., and Vang, M.H. (2014). The experience of presence in persuasive virtual environment. In G. Riva. J. Waterworth. and D. Murray (Eds.), *Interacting with presence: HCI and the sense of presence in computer-mediated environments* (pp. 164-178). DeGruyter open.

Francioni, B., Savelli, E., and Cioppo, M. (2018). Store satisfaction and store loyalty: The moderating role of store atmosphere. *Journal of Retailing and Consumer Services, 43*(C), 333-341.

Frank, L., Kennedy, R.S., Kellogg, R.S., and McCauley, M.E. (1983). Simulator sickness: A reaction to a transformed perceptual world. 1. Scope of the problem. Essex Corporation. 1-10.

French, A.M., Luo, X., and Bose, L.R. (2017). Toward a holistic understanding of continued use of social networking tourism: A mixed-methods approach. *Information and Management, 54*(6), 802-813.

Frijda, N. (1993). Moods, emotions episodes and emotions. In M. Lewis. and J. Haviland (Eds.), *Handbook of emotions* (pp. 59-74). New York: The Guilford Press.

Friesen, B.K. (2010). *Designing and conducting your first interview project.* Jossey-Bass: San Francisco, CA.

Fromberger, P., Meyer, S., Kempf, C., Jordan, K., and Muller, J.L. (2015). Virtual viewing time: The relationship between presence and sexual interest in androphilia and gynophilic men. *PLoS One,* 10, e0127156.

Gallace, A., Ngo, M., Sultaitis, J., and Spence, C. (2012). Multisensory presence in virtual reality: Possibilities and limitations. *Multiple Sensorial Media Advances and Applications: New Developments in MulSeMedia,* 1-40.

Gao, L., and Bai, X. (2014). Online consumer behaviour and its relationship to website atmospheric induced flow: Insights into online travel agencies in China. *Journal of Retailing and Consumer Services, 21*(4), 653-665. https://doi.org/10.1016/j.jretconser.2014.01.001

Gefen, D., and Straub, D.W. (2004). Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services. *Omega, 32*(6), 407-424.

Gehrke, D., and Turban, E. (1999). Determinants of successful website design: Relative importance and recommendations for effectiveness. *IEEE, HICSS '99 Proceedings of the thirty-second annual Hawaii international conference on system sciences, 5,* 5042.

Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika, 61*(1), 101-107. https://doi.org/10.1093/biomet/61.1.101

Genecon. (2011). *Understanding high street performance.* London: Department of Business Innovation and Skills.

Gibbs, R. J. (2012). *Principles of urban retail planning and development.* New Jersey: John Wiley and Sons Inc.

Gibson, A. and O'Rawe, M. (2017). Virtual Reality as a promotional tool: insights from a consumer travel fair. In T. Jung T. and M.C. tom Dieck (Eds.), *Augmented Reality and Virtual Reality - Empowering Human, Place and Business.* London: Springer, pp. 93-107.

Gill, I.J., Wall, G., and Simpson, J. (2012). Clients' perspectives of rehabilitation in one acquired brain injury residential rehabilitation unit: A thematic analysis. *Brain Injury, 26*(7-8), 909-920.

Gilman, L.M. (2008). Survey ethics. In P.J. Lavrakas (Ed.), *Encyclopaedia of Survey Research Methods.* Sage Research Methods. https://dx.doi.org/10.4135/9781412963947.n565

Gilmore, A. (2003). *Services Marketing and Management.* London: SAGE Publications.

Gilmore, A., and Simmons, G. (2007). Integrating sustainable tourism and marketing management: Can National Parks provide the framework for strategic change? *Strategic Change, 16*(5), 191.

Givens, L. M. (2008). *Convenience sample. In. The SAGE Encyclopaedia of Qualitative Research Methods*. Thousand Oaks, CA: Sage.

Glaser, B., and Strauss, A. (1967). *The discovery of grounded theory strategies for qualitative research.* Mill Valley, CA: Sociology Press.

Glazer, E., Hobson, C.L., Deming, E.S., and Fehlhaber, J.S. (2017). U.S. Patent No. 9. 824,391. Washington, DC: U.S. Patent and Trademark Office.

Gold, J.R., and Ward, S.V. (1994). *Place Promotion: The use of publicity and marketing to sell towns and regions.* Chichester: John Wiley and Sons.

Golden-Biddle, K., and Locke, K. (2007). *Composing qualitative research.* Thousand Oaks, CA: Sage Publications.

Goodwin, H. (2011). *Taking responsibility for tourism.* Oxford: Goodfellow Publishers.

Gorini, A., Capideville, C.S., De Leo, G., Mantovani, F., and Riva, G. (2011). The role of immersion and narrative in mediated presence: The virtual hospital experience. *CyberPsycholog Behav Soc New, 14*(3), 99-105.

Goossens, G. (2000). Tourism information and pleasure motivation. *Annals of Tourism Research, 27*(2), 301-321. https://doi.org/10.1016/S0160-7383(99)00067-5

Gottdiener, M. (2001). *The theming of America dreams, media fantasies, and themed environments* (2nd ed.). Boulder: Westview Press.

Govers, R., Go, F. M., and Kumar, K. (2007). Promoting tourism destination image. *Journal of Travel Research, 46*(1), 15-23.

Gray, D.E. (2014). *Doing Research in the Real World.* Sage Publications: London.

Greenfield, T., and Greener, S. (2016). *Research Methods for Postgraduate Students* (3rd ed.). Chichester, UK: Hoboken, NJ: John Wiley and Sons.

Greenlight VR. (2015). Virtual Reality Interest Highest Among Gen Z. *eMarketer.* Retrieved from https://www.emarketer.com/Article/Virtual-Reality-Interest-Highest-Among-Gen-Z/1013295

Gretzel, T., Fesenmaier, D.R. (2003). *Searching for the future: White paper on technology and change in destination marketing.* National Laboratory for Tourism and eCommerce. Philadelphia, PA.

Grewal, D., Roggeveen, A. L., and Nordfalt, J. (2017). The future of retailing. *Journal of Retailing, 93*, 1-6.

Grewal, D., Levy, M., and Kumar, V. (2009). Customer experience management in retailing: An organising framework. *Journal of Retailing, 85*(1), 1-14.

Griffin, T., and Dimanche, F. (2017). Urban tourism: the growing role of VFR and immigration. (2), 103-113.

Griffin, T., Giberson, J., Lee, S. H., Guttentag, D., and Kandaurova, M. (2017). Virtual reality and implications for destination marketing. *Tourism Travel and Research Association: Advancing Tourism Research Globally 2017 ttra International Conference.* Retrieved from https://scholarworks.umass.edu/ttra/2017/Academic_Papers_Oral/29

Griffin, T., and Hayllar, B. (2006). Historic waterfronts as tourism precincts: An experiential perspective. *Tourism and Hospitality Research, 7*(1), 3-16.

Guest, G., MacQueen, K. M., and Namey, E. E. (2012). *Applied thematic analysis.* US: SAGE.

Guest, G., Brunce, A., and Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods, 18*(1), 59-82. https://doi.org/10.1177/1525822X05279903

Guthrie, G. (2010). *Basic research methods: An entry to social science research.* Thousand Oaks, CA: Sage Publications.

Gutierrez, M., Vexo, F., and Thalmann, D. (2008). *Stepping into virtual reality.* London, UK: Springer-Verlag.

Guttentag, D. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management, 31*(5), 637-651.

Guy, C.M. (1998). Controlling new retail spaces: The impress of planning policies in Western Europe. *Urban Studies, 36*(5-6), 953-979.

Guy, C. (2000). From crinkly sheds to fashion parks: The role of financial investment in the transformation of retail parks. *International Review of Retail, Distribution and Consumer Research, 10*(4), 389-400.

Ha, H.Y. (2004). Factors influencing consumer perceptions of brand trust online. *Journal of Product and Brand Management, 13*(5), 329-342. https://doi.org/10.1108/10610420410554412

Ha, H.Y., and Perks, H. (2005). Effects of consumer perceptions of brand experience on the web: Brand familiarity, satisfaction and brand trust. *Journal of Consumer Behaviour, 4*(6), 438-452. https://doi.org/10.1002/cb.29

Haase, J. E., and Myers, S. T. (1988). Reconciling paradigm assumptions of qualitative and quantitative research. *Western Journal of Nursing Research, 10*, 128-137.

Haenlein, M., and Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis, *Understanding Statistics, 3*(4), 283–297.

Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2010). *Multivariate data analysis (7th ed.).* Englewood Cliffs: Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* Thousand Oaks: Sage.

Hair, J. F., Hult, G. T. M., Ringle, C. M., and Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling* (2nd Ed.). Thousand Oaks: Sage.

Hair, J., Anderson, R., Tatham, R., and Black, W. (1995). *Multivariate data analysis.* Englewood Cliffs: Prentice Hall, 4.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hair, J.F., Ringle, C.M., and Starstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19,* 139-151.

Hall, C.M., and Veer, E. (2016). The DMO is dead. Long live the DMO (or, why DMO managers don't care about post-structuralism). *Tourism Recreation Research, 41*(3), 354-357.

Hamid, M. R., Sami, W., and Sidek, M. M. (2017). Discriminant Validity Assessment: Use of Fornell and Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series, 890*(1), 012163.

Hammond, M., and Wellington, J. (2012). *Research methods: The key concepts* (1st ed.). London: Routledge. https://doi.org/10.4324/9780203097625

Handa, M., Aul, E.G., and Bajaj, S. (2012). Immersive technology – uses, challenges and opportunities. *International Journal of Computing and Business Research,* ISSN (Online): 2229-6166.

Hankinson, G. (2005). Destination brand images: A business tourism perspective*. Journal of Services Marketing, 19*(1), 24-32.

Hanna, S., and Rowley, J. (2019). The projected destination brand personalities of European capital cities and their positioning. *Journal of Marketing Management, 35*(11-12), 1135-1158. https://doi.org/10.1080/0267257X.2019.1647274

Hanna, S., and Rowley, J. (2015). Towards a model of the place brand web. *Tourism Management, 48,* 100-112. https://doi.org/10.1016/j.tourman.2014.10.012

Harris, C. (2012). Retailing within towns and city centres as a tourist retail attractions. In C. McIntyre, *Tourism and retail: the psychogeography of liminal consumption.* (pp. 29-50). Oxon: Routledge.

Harris, L. C., and Ezeh, C. (2008). Servicescape and loyalty intentions: an empirical investigation. *European Journal of Marketing, 42*(3/4), 390-422.

Hart, C., Farrell, A. M., Stachow, G., Reed, G., and Cadogan, J. W. (2007). Enjoyment of the shopping experience: Impact on customers' repatronage intentions and gender influence. *The Service Industries Journal, 27*(5), 583-604.

Hart, C., Stachow, G., and Cadogan, J.W. (2013). Conceptualising town centre image and the customer experience. *Journal of Marketing Management, 29*(15-16), 1753-1781. https://doi.org/10.1080/0267257X.2013.800900

Hartl, E., and Berger, B. (2017). Escaping reality: Examining the role of presence and escapism in user adoption of virtual reality glasses. In *Proceedings of the 25th European Conference on Information Systems (ECIS)* (pp. 2413-2428).

Hartnett, M. (2000). New Features Take Do-It-Best Website To Higher Level. *Stores,* 50–54.

Hashimoto, Y., Nagaya, N., Kojima, M., Miyajima, S., Ohtaki, J., Yamamoto, A., Mitani, T., and Inami, M. (2006). Straw-like user interface: Virtual experience of the sensation of drinking using a straw. In. *Proceedings of ACM SUGGHI ACE 2006.*

Hashimoto, Y., Inami, M., and Kajimoto, H. (2008). Straw-like sure interface (II): A new method of presenting auditory sensations for a more natural experience. In M. Ferre (Ed.), Haptics: Perception, devices and scenarios. EuroHaptics 2008. Lecture notes in computer science. 5024. (pp. 484-493). Berlin/Heidelberg: Springer. https://doi.org/10.1007/978-3-540-69057-3_62

Hasan, B. (2016). Perceived irritation in online shopping: The impact of website design characteristics. *Computers in Human Behaviour, 54,* 224-230.

Hassan, Z.A., Schattner, P., and Mazza, D. (2006). Doing a pilot study: Why is it essential? *Malaysian Family Physician, 31*(1), 70-73. eCollection.

Hassanein, K., and Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies, 65,* 689-708.

Hassouneh, D., and Brengman, M. (2015). Retailing in social virtual worlds: Developing a typology of virtual store atmospherics. *Journal of Electronic Commerce Research, 16,* 218–241.

Hayllar, B., and Griffin, T. (2005). The precinct experience: A phenomenological approach. *Tourism Management, 26*(4), 517-528.

Hayllar, B. and Griffin, T. (2006). A tale of two precincts: A phenomelogical analysis. *Presented at Cutting Edge Research in Tourism – New Directions, Challenges and Applications.* University of Surrey, UK.

Hayllar, B., Griffin, T., and Edwards, D. (2008). *City spaces - tourist places: Urban tourism precincts.* Oxford, UK: Elsevier.

Hays, S., Page, S.J., and Buhalis, D. (2013). Social media as a destination marketing tool: its use by national tourism organisations. *Current Issues in Tourism, 16*(3), 211-239.

Haytko, D.L., and Baker, J. (2004). It's all at the mall: exploring adolescent girls' experiences. *Journal of Retailing, 80*(1), 67-83. https://doi.org/10.1016/j.jretai.2004.01.005

Hein, D. W., and Rauschnabel, P. A. (2016). Augmented reality smart glasses and knowledge management: A conceptual framework for enterprise social networks. In A. Rossman, G. Stei, and M. Besch (Eds.), *Enterprise Social Networks* (pp. 83-109). Wiesbaden: Springer. https://doi.org/10.1007/978-3-658-12652-0_5

Heinemann, G., and Schwarzl, C. (2010). *New online retailing: Innovation and transformation.* Scopus. ISBN: 9783834923233, 3834923230

Heller, J., Chylinski, M., de Ruyter, K., Mahr, D., and Keeling, D.I. (2019). Let me imagine that for you: Transforming the retail frontline through augmenting customer mental imagery ability. *Journal of Retailing, 95*(2), 94-114. https://doi.org/10.1016/j.jretai.2019.03.005

Helmefalk, M., and Bertil, H. (2017). Multi-sensory congruent cues in designing retail store atmosphere: Effects on shoppers' emotions and purchase behaviour. *Journal of Retailing and Consumer Services, 38*(C), 1-11.

Henderson, J. (2017). Global cities, Tokyo, urban tourism*. International Journal of Tourism Cities, 3*(2), 143-157. https://doi.org/10.1108/IJTC-01-2017-0006

Henshaw, V., Medway, D., Warnaby, G. (2016). Marketing the 'City of Smells'. *Marketing Theory, 16*(2), 153-170.

Henseler, J. (2010). On the convergence of the partial least squares path modelling algorithm. *Computational Statistics, 25*(1), 107-120.

Henseler, J., Ringle, C. M., and Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. Sinkovics. and P. Ghauri (Eds.), *New Challenges to International Marketing (Advances in International Marketing)* (Vol. 20) (pp. 277-319). Bingley: Emerald Group Publishing. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hermida, L., and Pavón, I. (2019). Spatial aspects in urban soundscapes: Binaural parameters application in the study of soundscapes from Bogtá-Colombia and Brasília-Brazil. *Applied Acoustics, 145,* 420-430.

Hesse-Biber, S. (2010). Qualitative approaches in mixed methods practice. *Qualitative Inquiry, 16*(6), 455-468. https://doi.org/10.1177/1077800410364611

Hertzog, M.A. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing and Health,* 31(2), 180-191. https://doi.org/10.1002/nur.20247

Hill, R. (1998). What sample size is 'enough' in internet survey research? *Interpersonal Computing and Technology: An Electronic Journal of the 21st Century, 6*(3-4).

Hinton, P.R. (2014). *Statistics explained* (3rd Ed.). London, New York: Routledge.

Hirschman, E., and Holbrook, M. (1982). Hedonic consumption: Emerging concepts, methods, and propositions. *Journal of Marketing, 46*, 92-101.

Hofer, M., Husser, A., and Prabhu, S. (2017). The effect of an avatar's emotional expressions on players' fear reactions: The mediating role of embodiment. *Computers in Human Behaviour, 75,* 883-890.

Holbrook, M., and Hirschman, E. (1982). The experiential aspects of consumption: Consumer fantasies, feelings and fun. *Journal of Consumer Research, 9*(2), 132-140.

Holliday, R.C., Ballinger, C., and Playford, E.D. (2007). Goal setting in neurological rehabilitation: Patients' perspectives. *Disability and Rehabilitation, 29*(5), 389-394. https://doi.org/10.1080/09638280600841117

Hollins, C. (2004). W(h)ither the high street? *Paper presented at Contemporary Issues in Retail Marketing Conference, Retailing in Town and City Centres: Current Issues, Future Prospect.* Manchester, September.

Holloway, I. (1997). *Basic concepts for qualitative research.* Oxford: Blackwell Science.

Hong, W., Thong, J.Y.L., and Tam, K.Y. (2004). The effects of information format and shopping task on consumers' online shopping behaviour: A cognitive fit perspective. *Journal of Management Information Systems, 21*(3), 149-184.

Hong, J.Y., He, J., Lam, B., Gupta, R., and Gan, W.S. (2017). Spatial audio for soundscape design: Recording and reproduction. *Applied Sciences, 7*(6), 627.

Hooper, D., Coughlan, J., and Mullen, M. (2013). The servicescape as an antecedent to service quality and behavioural intentions. *Journal of Services Marketing, 27*(4), 271-280. https://doi.org/10.1108/08876041311330753

Horvath, D.B. (2018). A new era for urban tourism? The case of Venice, Italy. *Journal of Tourism, Culture and Territorial Development,* 13-32.

Hosany, S., and Gilbert, D. (2010). Measuring tourists' emotional experiences toward hedonic holiday destinations. *Journal of Travel Research, 51*(3), 513-526.

Hosany, S., and Prayag, G. (2013). Patterns of tourists' emotional responses, satisfaction, and intentions to recommend. *Journal of Business Research, 66*(6), 730-737.

Hospers, G.J. (2006). Borders, Bridges and Branding: The Transformation of the Oresund Region into an Imagined Space. *European Planning Studies, 14,* 1015-1033.

Howard, E. (2007). New shopping centres: Is leisure the answer? *International Journal of Retail and Distribution Management, 35*(8), 661-672.

Howard, E. (1997). The management of shopping centres: Conflict or collaboration? *International Review of Retail, Distribution and Consumer Research, 7*(3)*,* 263-285.

Hox, J., and Bechger, T. (1998). An introduction to structural equation modelling. *Family Science Review, 11,* 354-373.

Hoyle, R. H. (1995). The structural equation modelling approach: Basic concepts and fundamental issues. In R. H. Hoyle (Ed.), *Structural equation modelling: Concepts, issues, and applications* (pp. 1-15). Thousand Oaks, CA, US: Sage Publications, Inc.

Hoyt, L. (2005). *The business improvement district: An internationally diffused approach to revitalisation.* International Downtown Association: Washington D.C.

Hsai, K.F., Chen, N.S., and Huang, S.Y. (2012). Learning while exercising for science education in augmented reality among adolescents. *Interactive Learning Environments, 20*(4).

Hsieh, A.T., and Chang, J. (2006). Shopping and tourist night markets in Taiwan. *Tourism Management, 27*(1), 138-145.

Hubley A.M. (2014) *Discriminant Validity.* In A.C. Michalos (Ed.)*, Encyclopaedia of Quality of Life and Well-Being Research.* Dordrecht: Springer. https://doi.org/10.1007/978-94-007-0753-5

Huang, L.T. (2017). Exploring consumers' intention to urge to buy in mobile commerce: The perspective of pleasure-arousal-dominance. *PACIS 2017 Proceedings,* 288.

Huang, L.T. (2016). Flow and social capital theory in online impulse buying. *Journal of Business Research, 69*, 2277-2283.

Huang, Y.C., Backman, K.F., Backman, S.J., and Chang, L.L. (2016). Exploring the implications of virtual reality technology in tourism marketing: An integrated research framework. *International Journal of Tourism Research, 18*(2), 116-128. https://doi.org/10.1002/jtr.2038

Huang, T. L., and Feng, H. L. (2014). Formation of augmented reality interactive technology's persuasive effects from the perspective of experiential value. *Internet Research, 24*(1), 82-109.

Huang, Y.C., Backman, S.J., Backman, K.F., and Moore, D. (2013). Exploring user acceptance of 3D virtual worlds in travel and tourism marketing. *Tourism Management, 26*, 490-501. https://doi.org/10.1016/j.tourman.2012.09.009

Hudson, S., Matson-Barkat, S., Pallamin, N., and Jegou, G. (2019). With or without you? Interaction and immersion in a virtual reality experience. *Journal of Business Research, 100,* 459-468.

Hughes, C., and Jackson, C. (2015). Death of the high street: Identification, prevention, reinvention. *Regional Studies, Regional Science, 2*(1), 237-256. https://doi.org/10.1080/21681376.2015.1016098

Hui, M., Dubé, L., and Chebat, J.C. (1997). The impact of music on consumers' reactions waiting for services. *Journal of Retailing, 73*(1), 87-104.

Hultman, J., and Hall, C.M. (2012). Tourism place-making: Governance of Locality in Sweden. *Annals of Tourism Research, 39*(2), 547-570.

Hultman, M., Skarmaes, D., Oghazi, P., and Beheshti, H.M. (2015). Achieving tourist loyalty through destination personality, satisfaction and identification. *Journal of Business Research, 68*(11)*,* 2227-2231.

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal, 20*(2)*,* 195-204.

Hussain, S., Fangwei, Z., Siddiqi, A.F., Ali, Z., and Shabbir, M.S. (2018). Structural Equation Model for Evaluating Factors Affecting Quality of Social Infrastructure Projects. *Sustainability, 10,* 1415, 1-25.

Hwang, H., Malhotra, N.K., Kim, Y., Tomiuk, M.A., and Hong, S. (2010). A comparative study on parameter recovery of three approaches to structural equation modelling. *Journal of Marketing Research, 47,* 699-712.

Hyun, M.Y., and O'Keefe, R.M. (2012). Virtual destination image: Testing a telepresence model. *Journal of Business Research, 65*(1)*,* 29-35.

lcañiz, M., Baños, R., Botella, C., and Rey, B. (2003). The EMMA Project: Emotions as a Determinant of Presence. *PsychNology Journal, 1*(2), 141-150.

Ichikawa, H., Yamato, N., and Dustan, P. (2017). Competitiveness of global cities from the perspective of the global power city index. *Procedia Engineering, 198,* 736-742. https://doi.org/10.1016/j.proeng.2017.07.125

İçli, E.G. and Vural, B.B. (2010). Şehir Markası Yaratma Süreci ve Marka Şehir Çerçevesinde Kırklareli İlinin Değerlendirilmesi, Uluslararası II.

Trakya Kalkınma-Girişimcilik Sempozyumu, İğneada-Kırklareli. Cited in. Kaya and Marangoz.

Ihantola, E.M., and Kihn, L.A. (2011). Threats to validity and reliability in mixed methods accounting research. *Qualitative Research in Accounting and Management, 8*(10), 39-58. https://dx.doi.org/100.1108/11766091111124694

Islam, J.U., and Rahman, Z. (2017). The impact of online brand community characteristics on customer engagement: An application of Stimulus-Organism-Response paradigm. *Telematics and Informatics, 34,* 96-109

Ihde, D. (1990). *Technology and the lifeworld: From garden to earth.* Indiana University Press.

IKEA. (2019). IKEA Virtual Reality Showroom. *Demodern.* Retrieved from https://demodern.com/projects/ikea-vr-showroom

IMRG Capgemini. (2017). IMRG Capgemini Retail Sales Index: UK Online Sales Exceed £130 billion in 2016, Fuelled by sales from smartphones. Retrieved from https://www.capgemini.com/gb-en/news/uk-news/imrg-capgemini-e-retail-sales-index-uk-online-sales-exceed-ps130-billion-in-2016

Insch, A., and Florek, M. (2008). A great place to live, work and play. *Journal of Place Management and Development, 1*(2), 138-149. https://doi.org/10.1108/17538330810889970

International Organisation of Standardisation. (2014). ISO 12913-1:2014(en) Acoustics - Soundscape - Part 1: Definition and conceptual framework. Retrieved from https://www.iso.org/obp/ui/#iso:std:iso:12913:-1:ed-1:v1:en

IPM. (2019). About BIDs. Retrieved from https://www.placemanagement.org/special-interest-groups/welcome-to-the-bid-foundation/about-bids/

Isaac, S., and Michael, W. B. (1995). *Handbook in research and evaluation: A collection of principles, methods, and strategies useful in the planning, design, and evaluation of studies in education and the behavioural sciences* (3rd ed.). San Diego, CA, US: EdITS Publishers.

ISO. (2014). ISO 12913-1:2014 Acoustics – Soundscape – Part 1: Definition and Conceptual Framework. Geneva: International Organisation for Standardisation.

Iwata, H., Yano, H., Uemura, T., and Moriya, T. (2004). Food texture display. In *12th International symposium on haptic interfaces for virtual environment and teleoperator systems* (pp. 310-315).

Izard, C.E. (1977). Human emotions. New York: Plenum.

Jacobs, M. H., Fehres, P., and Campbell, M. (2012). Measuring emotions toward wildlife: a review of generic methods and instruments. *Humans Dimensions of Wildlife, 17*(4), 233-247.

Jacobsen, J.K.S., and Munar, A.M. (2012). Tourist information search and destination choice in a digital age. *Tourism Management Perspectives, 1,* 39-47. https://doi.org/10.1016/j.tmp.2011.12.005

Jalil, N.A.A., Fikry, A., and Zainuddin, A. (2016). The impact of store atmospherics, perceived value, and customer satisfaction on behavioural intention. *Procedia Economics and Finance, 37,* 538-544. https://doi.org/10.1016/S2212-5671(16)30162-9

Janda, S., and Ybarra, A. (2005). Do product and consumer characteristics affect the relationship between online experience and customer satisfaction. *Journal of Internet Commerce, 4*(4), 133-151. https://doi.org/10.1300/J179v04n04_09

Jang, S., and Namkung, Y. (2009). Perceived quality, emotions, and behavioural intentions: Application of an extended Mehrabian-Russell model to restaurants. *Journal of Business Research, 62*(4), 451-460.

Jang, H.Y., Olfman, L., Ko, I.S., Koh, J., and Kim, K. (2008). The influence of on-line brand community characteristics on community commitment and brand loyalty. *International Journal of Electronic Commerce, 12*(3), 57-80.

Jairath, N., Hogerney, M., and Parsons, C. (2000). The role of the pilot study: A case illustration from cardiac nursing research. *Applied Nursing Research, 13*(2), 92-96.

Javornik, A. (2016a). 'It's an illusion, but it looks real!' consumer affective, cognitive and behavioural responses to augmented reality applications. *Journal of Marketing Management, 32*(9-10), 987-1011.

Jennett, C., Cox, A.L., Cairns, P., Dhoparee, S., Epps, A., Tijs, T., and Walton, A. (2008). Measuring and defining the experience of immersion in games. International *Journal of Human-Computer Studies, 66*(9), 641-661.

Jeon, S., and Choi, S. (2009). Haptic augmented reality: Taxonomy and an example of stiffness modulation. *Presence: Teleoperators and Virtual Environments, 18*(5), 387-408.

Jeon, B.N., Han, K., and Lee, M.J. (2006). Determining factors for the adoption of e-business: The case of SMEs in Korea. *Applied Economics, 38*(16), 1905-1916.

Jepson, S., and Sharpley, R. (2014). More than sense of place? Exploring the emotional dimension of rural tourism experiences. *Journal of Sustainable Tourism, 23*(8-9), 1157-1178.

Jia, Q., Guo, Y., and Barnes, S.J. (2017). Enterprise 2.0 post-adoption: Extending the information system continuance model based on the technology-organisation-environment framework. *Computers in Human Behaviour, 67,* 95-105. https://doi.org/10.1016/j.chb.2016.10.022

Jiang, Z., and Benbasat, I. (2007). Investigating the influence of the functional mechanisms of online product presentations. *Information Systems Research, 18*(4)*,* 454-470.

Jiang, Y., Ramkissoon, H., and Mavondo, F. (2016). Destination marketing and visitor experiences: The development of a conceptual framework. *Journal of Hospitality Marketing and Management, 25*(6), 653-675.

Jin, B., and Park, J.Y. (2006). The moderating effect of online purchase experience on the evaluation of online store attributes and the subsequence impact on market response outcomes. *Advances in Consumer Research, 33,* 203-211.

Jin, B., Park, J.Y., and Kim, J. (2008). Cross-cultural examination of the relationships among firm reputation, e-satisfaction, e-trust, and e-loyalty. *International Marketing Review, 25*(3), 324-337.

Johnson, R.B., and Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33*(7)*,* 14-26.

Jones, C., and A. Orr. (1999). Local Commercial and Industrial Rental Trends and Property Market Constraints. *Urban Studies, 36*(2), 215–229.

Jones, C., and Livingstone, N. (2015). Emerging implications for online retailing for real estate: Twenty-first century clicks and bricks. *Journal of Corporate Real Estate, 17*(3), 226-239.

Jones, C., and Livingstone, N. (2018). The 'online high street' or the high street online? The implications for the urban retail hierarchy. *The International Review of Retail, Distribution and Consumer Research, 28*(1), 47-63.

Jung, T.H., and tom Dieck, M.C. (2017). Augmented reality, virtual reality and 3D printing for the co-creation of value for the visitor experience at cultural heritage places. *Journal of Place Management and Development,* 10(2), 140-151.

Jung, T. tom Dieck, M.C., tom Dieck, D., and Moorhouse, N. (2017). Tourists experience of virtual reality applications. *IEEE International Conference on Consumer Electronics.*

Jung, T.H., and tom Dieck, M.C. (2017). Augmented reality, virtual reality and 3D printing for the co-creation of value for the visitor experience at cultural heritage places. *Journal of Place Management and Development, 10(*2), 140-151.

Jung, T., tom Dieck, M.C., Rauschnabel, P., Ascenção, M., Tuominen, P., and Moilanen, T. (2017). Functional, hedonic or social? Exploring antecedents and consequences of virtual reality rollercoaster usage. In T. Jung and M. Claudio tom Dieck (Eds.), *Augmented reality and virtual reality – empowering human, place and business.* Springer, Forthcoming.

Jung, T., Dieck, T., Lee, H., and Chung, N. (2016). Effects of virtual reality and augmented reality on visitor experiences in museum. In A. Inversini, and R. Schegg (Eds.), *Information and Communication Technologies in Tourism* (pp. 621-635). Springer.

Jung, T., Chung, N., and Lee, M.C. (2015). The determinants of recommendations to use augmented reality technologies: The case of a Korean theme park. *Tourism Management, 49,* 75-86.

Jung, Y., and Pawlowski, S.D. (2014). Virtual goods, real goals: Exploring means-end goal structures of consumers in social virtual worlds. *Information and Management, 51*(5)*,* 520-531.

Kalakota, R., and Whinston, A.B. (1997). *Electronic commerce: A manager's guide.* Boston, MA, USA: Addison-Wesley Longman Publishing Co., Inc.

Kaltcheva, V.D., and Weitz, B.A. (2006). When should a retailer create an exciting store environment? *Journal of Marketing, 70*(1), 107-118.

Kaminakis, K., Karantinou, K., Koritos, C., and Gounaris, S. (2019). Hospitality servicescape effects on customer-employee interactions: A multilevel study. *Tourism Management, 72*, 130-144. https://dx.doi.org/10.1016/j.tourman.2018.11.013

Kang, C.D. (2016). Spatial access to pedestrians and retail sales in Seoul, Korea. *Habitat International, 57,* 110-120.

Kang, C.D. (2015). The effects of spatial accessibility and centrality to land use on walking in Seoul, Korea. *Cities, 46,* 94-103.

Kang, J. (2011). Urban soundscape: From research to practice, local authority noise action forum group. *University of Sheffield, UK,* 212-213.

Kaplan, D. (2009). Structural equation modelling: Foundations and extensions (2nd ed.). Sage. https://dx.doi.org/10.4135/9781452226576

Kaplanidou, K., and Vogt, C. (2006). A structural analysis of destination travel intentions as a function of web site features. *Journal of Travel Research, 45*(2), 204-216. https://doi.org/10.1177/0047287506291599

Kar, A.K., and Singh, P. (2012). A model for bundling mobile value added services using neural networks. *International Journal of Applied Decision Sciences, 5*(1), 47-63.

Karahanna, E., and Straub, D.W. (1999). The psychological origins of perceived usefulness and ease-of-use. *Information and Management, 35*(4), 237-250.

Karimov, F.P., Brengman, M., Van Hove, L., and Van, L. (2011). The effect of website design dimensions on initial trust: A synthesis of the empirical literature. *Journal of Electronic Commerce Research, 12*(4), 272-301.

Katros, V. (2000). A note on internet technologies and retail industry trends. *Technology in Society, 22*(1), 75-81.

Kavaratzis, M. (2004). From city marketing to city branding: Towards a theoretical framework for developing city brands. *Place Branding, 1*(1), 58-73.

Kavaratzis, M., and Ashworth, G.J. (2008). Place marketing: How did we get here and where are we going? *Journal of Place Management and Development, 1*(2), 150-165.

Kavaratzis, M., and Hatch, M.J. (2013). The dynamics of place brands: An identity-based approach to place branding theory. *Marketing Theory, 13*(10), 69-86.

Kavaratzis, M. (2012). From "necessary evil" to necessity: Stakeholders' involvement in place branding. Journal of Place *Management and Development, 5*(1), 7-19.

Kaya, F., and Marangoz, M. (2014). Brand attitudes of entrepreneurs as a stakeholder towards a city. *Procedia Social and Behavioural Sciences: 10th International Strategic Management Conference, 150,* 485-493.

Kelle, U. (2014). Mixed Methods. In: Baur N., Blasius J. (Eds.). *Handbuch Methoden der empirischen Sozialforschung.* Wiesbaden: Springer. https://doi.org/10.1007/978-3-531-18939-0_8

Keller, K.L. (1998). *Strategic brand management building, measuring, and managing brand equity.* Prentice Hall: Upper Saddle River.

Kemp, E., Childers, C.Y., and Williams, K.H. (2012). Place branding: Creating self-brand connections and brand advocacy. *Journal of Product and Brand Management, 21*(7), 508-515.

Kennedy, J. (2008a). Anonymity. In P. Lavrakas. (2008). *Encyclopaedia of Survey Research Methods* (p. 28). SAGE Research Methods.

Kennedy, J. (2008b). Confidentiality. In P. J. Lavrakas. (2008). *Encyclopaedia of Survey Research Methods,* (p. 132). SAGE Research Methods.

Kennedy, B.L. (2018). Chapter 4 – Deduction, Induction, and Abduction. In Flick, U. (2018) (Ed.). *The SAGE handbook of qualitative data collection*. Sage. https://dx-doi-org.mmu.idm.oclc.org/10.4135/9781526416070.n4

Kent, T. (2007). Creative space: design and the retail environment. *International Journal of Retailing and Distribution Management, 35*(9), 734-745.

Kerawalla, L., Luckin, R., Seljeflot, S., and Woolard, A. (2006). ''Making it real'': exploring the potential of augmented reality for teaching primary school science. *Virtual Reality, 10,* 163–174.

Keshavarz, B., and Hecht, H. (2011). Validating an efficient method to quantify motion sickness. *Human Factors, 53*(4), 415-426. https://dx.doi.org/10.1177/0018720811403736

Khan, A.N., and Ali, A. (2018). Factors affecting retailer's adoption of mobile payment systems: A SEM-Neural network modelling approach. *Wireless Personal Communications, 3,* 1-23.

Kim, M.J., Lee, C.K., and Jung, T. (2018). Exploring consumer behaviour in virtual reality tourism using an extended stimulus-organism-response model. *Journal of Travel Research*, 1-21. https://doi.org/10.1177%2F0047287518818915

Kim, H.Y., Lee, J.Y., Mun, J.M., and Johnson, K.K.P. (2017). Consumer adoption of smart in-store technology: Assessing the predictive value of attitude versus beliefs in the technology acceptance model. *International Journal of Fashion Design, Technology and Education, 10*(1), 26-36.

Kim, J., and Fesenmaier, D.R. (2014). Measuring emotions in real time: Implications for tourism experience design. *Journal of Travel Research, 54*(4), 419-429. https://doi.org/10.1177/0047287514550100

Kim, D., and Perdue, R.R. (2011). The influence of image on destination attractiveness. *Journal of Travel and Tourism Marketing, 28*(3), 225-239. https://doi.org/10.1080/10548408.2011.562850

Kim, T., and Biocca, F. (1997). Telepresence via television: Two dimensions of telepresence may have difference connections to memory and persuasion. *Journal of Computer-Mediated Communication, 3*(2).

Kim, J., and Forsythe, S. (2008). Adoption of virtual try-on technology for online apparel shopping. *Journal of Interactive Marketing, 22*(2), 45-59. https://doi.org/10.1002/dir.20113

Kim, S. S., Timothy, D. J., and Hwang, J. (2011). Understanding Japanese tourists' shopping preferences using the decision tree analysis method. *Tourism Management, 32*(3), 544-554.

Kim, K., Rosenthal, M.Z., Zielinksi, D.J., and Brady, R. (2014). Effects of virtual environment platforms on emotional responses. *Computer Methods and Programs in Biomedicine, 113*(3), 882-893.

Kim, J.J., and Fesenmaier, D.R. (2015). Measuring emotions in real time implications form tourism experience design. *Journal of Travel Research, 54*(4), 419-429.

Kim, S. J., and Shin, D. H. (2017). The effects of ambient scent on hedonic experience on online shopping. *Proceedings of the 11th international conference on ubiquitous information management and communication*, 1-5.

Kim, H., Kim, Y.K., Lee, J.Y., Choi, A.R., Kim, D.J., and Choi, J.S. (2019). Hypometabolism and altered metabolic connectivity in patients with internet gaming disorder and alcohol use disorder. Progress in neuro-psychopharmacology and biological psychiatry, 95, Article 109680. https://doi.org/10.1016/j.pnpbp.2019.109680

King, C.J., and Lin, H.Y. (2006). Impact of telepresence levels on internet advertising effects. *CyberPsychology and Behaviour, 9*(1). https://doi.org/10.1089/cpb.2006.9.82

King, G., Keohane, R. O., and Verba, S. (1994). *Designing social inquiry: Scientific inference in qualitative research.* Princeton: Princeton University Press.

Klein, L.R. (2003). Creating virtual product experiences: The role of telepresence. *Journal of Interactive Marketing, 17,* 41-55.

Kline, R. B. (2010). *Principles and practice of structural equation modelling* (3rd ed.). New York: Guilford Press.

Klingman, A. (2007). *Brandscapes: Architecture in the experience economy.* Cambridge, MA: MIT Press.

Ko, E., Kim, E.Y., and Lee, E.K. (2009). Modelling consumer adoption of mobile shopping for fashion products in Korea. *Psychology and Marketing, 26*(7), 669-687. https://doi.org/10.1002/mar.20294

Komninos, N. (2002). *Intelligent cities.* London: Spon Press.

Koo, D.M., and Ju, S.H. (2010). The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intentions. *Computers in Human Behaviour, 26*(3), 377-288.

Kolb, B. (2006). *Tourism marketing for cities and towns.* Routledge: Oxford.

Kõltringer, C., and Dickinger, A. (2015). Analysing destination branding and image from online sources: A web content mining approach. *Journal of Business Research, 68*(9), 1836-1843. https://dx.doi.org/10.1016/j.jbusres.2015.01.011

Kotler, P. (1973). Atmosphere as a marketing tool. *Journal of Retailing, 49*(4), 48-64.

Kotler, P., Hamlin, M.A., Rein, I., and Haider, D.H. (2002). *Marketing Asian Places.* Singapore: John Wiley and Sons.

Kotler, P., and Levy, S.J. (1969). Broadening the concept of marketing. *The Journal of Marketing, 33*(1), 10-15.

Kotler, P., Haider, D. H., and Rein, U. (1993). *Marketing Places: Attracting investment, industry, and tourism to cities, states and nations.* New York: The Free Press.

Kotler, P., Asplund, C., Rein, I., and Haider, D. (1999). *Marketing Places Europe.* Financial Times Prentice Hall.

Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behaviour. *Information Systems Research, 13*(2), 205-224.

Kourouthanassis, P.E., and Giaglis, G.M. (2014). Introduction to the special issue mobile commerce: The past, presence, and future of mobile commerce research. *International Journal of Electronic Commerce, 16*(4), 5-18. https://doi.org/10.2753/JEC1086-4415160401

Knoeferle, K.M., Paus, V.C., and Vossen, A. (2017). An upbeat crowd: Fast in-store music alleviates negative effects of high social density on customers' spending. *Journal of Retailing, 93*(4), 541-549. https://dx.doi.org/10.1016/j.jretai.2017.06.004

Krabbe, P.F.M. (2017). *The measurement of health and health status. Concepts, methods and applications from a multidisciplinary perspective* (1st ed.). Academic Press, Elsevier. https://doi.org/10.1016/C2013-0-19200-8

Kraemer, H.C., Mintz, J., Noda, A., Tinklenberg, J., and Yesavage, J.A. (2006). Caution regarding the use of pilot studies to guide power calculations for study proposals. *Archive of General Psychiatry, 63*(5), 484-489. https://dx.doi.org/10.1001/archpsyc.63.5.484

Krasonikolakis, I.G., Vrechopoulos, A.P., and Pouloudi, A. (2011). Defining, applying and customising store atmosphere in virtual reality commerce: Back to basics? *International Journal of e-Services and Mobile Applications, 3*(2), 59-72.

Krasonikolakis, I., Vrechopoulos, A., Pouloudi, A., and Dimitriadis, S. (2018). Store layout effects on consumer behaviour in 3D online stores. *European Journal of Marketing, 52(*5-6), 1223-1256. https://doi.org/10.1108/EJM-03-2015-0183

Krishna, A. (2012). An integrative review of sensory marketing: Engaging the senses to affect perception, judgement and behaviour. *Journal of Consumer Psychology, 22*(3)*,* 332-351.

Kulviwat, S., Bruner, G.C., Kumar, A., Nasco, S.A., and Clark, T. (2007). Toward a unified theory of consumer acceptance technology. *Psychology and Marketing, 24*(12). https://doi.org/10.1002/mar.20196

Kumar, I., Garg, R., and Rahman, Z. (2010). Influence of retail atmospherics on customer value in an emerging market condition. *Great Lakes herald, 4*(1), 1-13.

Kyle, G. T., and Lee, J. J. (2012). Recollection consistency of festival consumption emotions. *Journal of Travel Research, 51*(2), 178-190.

Lackey, N.R., and Wingate, A.L. (1986). The pilot study: One key to research success. *Kansas State Nurses Association, 61*(11), 6-7.

Lalicic, L., and Önder, I. (2018). Residents' involvement in urban tourism planning: Opportunities from a smart city perspective. *Sustainability, 18*(6), 1852. https://doi.org/10.3390/su10061852

Lancaster, G.A., Dodd, S., and Williamson, P.R. (2004). Design and analysis of pilot studies: Recommendations for good practice. *Journal of Evaluation in Clinical Practice, 10*(2), 307-312.

Landry, D. (2000). *The creative city: A toolkit for urban innovators.* Upper Saddle: N.J.: Prentice Hall.

Lau, H., Kan, C., and Lau, K. (2013). How Consumers Shop in Virtual Reality? How It Works?. *Advances in Economics and Business, 1*(1), 28-38. DOI: 10.13189/aeb.2013.010104

Lavrakas. (2008). *Encyclopaedia of Survey Research Methods.* SAGE Research Methods.

Law, M. C. (1996). *Tourism in Major Cities.* London: International Thomson Business Press.

Law, C.M. (1992). Urban tourism and its contribution to economic regeneration. *Urban Studies, 2*9(3-4), 599-618.

Lee, D., Moon, J., Kim, Y.J., and Yi, M.Y. (2014). Antecedents and consequences of mobile phone usability: Linking simplicity and interactivity to satisfaction, trust, and brand loyalty. *Information and Management, 52*(3).

Lee, J. (2014). Visitors' emotional responses to the festival environment. *Journal of Travel and Tourism Marketing, 31*(1), 114-131.

Lee, H.H., Fiore, A.M., and Kim, J. (2006). The role of the technology acceptance model in explaining effects of image interactivity technology on consumer responses. *International Journal of Retail and Distribution Management, 34*(8), 621-644.

Lee, S.A. (2018). M-servicescape: Effects of the hotel mobile app servicescape preferences on customer response. *Journal of Hospitality and Tourism Technology, 9*(2), 172-187. https://doi.org/10.1108/JHTT-08-2017-0066

Lee, E., and Han, S. (2017). Mobile service consumption values: An exploratory mixed-method study. *Information Technology and Management, 18*(4), 253-264.

Lee, K.L. (2004). *Presence, explicated. Communication Theory, 14*(1), 27-50.

Lee, C. K., Lee, Y. K., and Lee, B. (2005). Korea's destination image formed by the 2002 World Cup. *Annals of Tourism Research, 32*(4), 839-858.

Lee, O., and Oh, J.E. (2007). The impact of virtual reality functions of a hotel website on travel anxiety. *CyberPsychology Behaviour, 10*(4), 584-586. https://dx.doi.org/10.1089/cpb.2007.9987

Lee, K.C., and Chung, N. (2008). Empirical analysis of consumer reaction to the virtual reality shopping mall. *Computers in Human Behaviour, 24*(1), 88-104.

Lee, J. (2014). Visitors' emotional responses to the festival environment. *Journal of Travel and Tourism Marketing, 31*(1), 114-131.

Leenders, M.A.A., Smidt, A., and El Haji, A. (2019). Ambient scent as a mood inducer in supermarkets: The role of scent intensity and time-pressure of shoppers. *Journal of Retailing and Consumer Services, 48,* 270-280. https://doi-org.mmu.idm.oclc.org/10.1016/j.jretconser.2016.05.007

Lefebvre, H. (2004). Rhythmanalysis. London, England: Continuum.

Leue, M.C., Jung, T., tom Dieck, D. (2015). Google Glass augmented reality: Generic learning outcomes for art galleries. In I. Tussyadiah and A. Inversini (Eds.), *Information and Communication Technologies in Tourism* (pp. 463-476). Vienna, New York: Springer. https://dx.doi.org/10.1007/978-3-319-14343-9_34

Lew, A. A. (2007). Pedestrian shopping streets in the restructuring of the Chinese city. In T. Coles, and A. Church (Eds.). *Tourism, power and place* (pp. 150-170). London: Routledge.

Lew, A.A. (2017). Tourism planning and place making: Place-making or placemaking? *Tourism Geographies, 19*(3), 448-466.

Li, H., Daugherty, T., and Biocca, F. (2001). Characteristics of virtual experience in electronic commerce: A protocol analysis. *Journal of Interactive Marketing, 15*(3), 13-30.

Li, H., Daugherty, T., and Biocca, F. (2002). Impact of 3D advertising on product knowledge, brand attitude and purchase intention: The mediating role of presence. *Journal of Advertising, 31*(3), 43-57. https://doi.org/10.1080/00913367.2002.10673675

Li, Y.M., and Yeh, Y.S. (2010). Increasing trust in mobile commerce through design aesthetics. *Computers in Human Behaviour, 26*(4), 673-684.

Li, M., Dong, Z., and Chen, X. (2012). Factors influencing consumption experience of mobile commerce. *Internet Research, 22*(2), 120-141. https://doi.org/10.1108/10662241211214539

Li, T., and Meshkova, Z. (2013). Examining the impact of rich media on consumer willingness to pay in online stores. *Electronic Commerce Research and Applications, 12*(6), 449-461.

Li, S., Scott, N., and Walters, G. (2015). Current and potential methods for measuring emotion in tourism experiences: a review. *Current Issues in Tourism, 18*(9), 805-827.

Line, N.D., Runyan, R.C., Costen, W., Frash, R., and Antun, J.M. (2012). Where everybody knows your name: Homophily in restaurant atmospherics*. Journal of Hospitality Marketing and Management, 21*(1), 1-19.

Lian, J.W., Yen, D.C., and Wang, Y.T. (2014). Exploratory study to understand the critical factors affecting the decision to adopt cloud computing in Taiwan hospital. *International Journal of Information Management, 34*(1), 28-36.

Liébana-Cabanillas, F., de Luna, I.R., and Montoro-Rios, F. (2017). Intention to use new mobile payment systems: A comparative analysis of SMS and NFC payments. *Economic Research-Ekonomska Istraživanja, 30*(1), 892-910. https://doi.org/10.1080/1331677X.2017.1305784

Line, N. D., Hanks, L., and Kim, W. G. (2015). An expanded servicescape framework as the driver of place attachment and word of mouth. *Journal of Tourism and Hospitality Research*, 1-24.

Line, N.D., Runyan, R.C., Costen, W., Frash, R., and Antun, J.M. (2012). Where everybody knows your name: Homophily in restaurant atmospherics. *Journal of Hospitality Marketing and Management, 21*(1), 1-19.

Liu, H. (2016). The role of negative emotions in shaping tourists' experiences. *Tourism Travel and Research Association: Advancing Tourism Research Globally,* 13.

Liu, X., He, M., Gao, F., and Xie, P. (2008). An empirical study of online shopping customer satisfaction in China: A holistic perspective. *International Journal of Retail and Distribution Management, 36*(11), 919-940.

Liu, S., Cheung, L.T.O. (2016). Sense of place and tourism business development. *Tourism Geographies: An International Journal of Tourism Space, Place and Environment, 18*(2), 174-193.

Liu, A., Wang, X.L., Liu, F., Yao, C., and Deng, Z. (2018). Soundscape and its influence on tourist satisfaction. *The Services Industries Journal,* 38(3-4), 164-181. https://doi.org/10.1080/02642069.2017.1382479

Liu, Y., and Jang, S.C. (2009). The effects of dining atmospherics: An extended Mehrabian-Russell model. *International Journal of Hospitality Management 28*(4), 494-503. https://doi.org/10.1016/j.ijhm.2009.01.002

Loiacono, E.T., Watson, R.T., and Goodhue, D.L. (2002). WebQualTM: A Measure of Web Site Quality. In *AMA Winter Conference*, Austin, TX.

Lombard, M., and Snyder-Duch, J. (2001). Interactive advertising and presence*. Journal of Interactive Advertising, 1*(2), 56-65. https://doi.org/10.1080/15252019.2001.10722051

Lonsway, B. (2009). *Making leisure work: Architecture and the experience economy.* London: Routledge.

Losch, M. E. (2008). Informed Consent. In P. J. Lavrakas (Ed.), *Encyclopaedia of Survey Research Methods* (pp. 336-337). SAGE Research Methods.

Loureiro, S.M.C., and Roschk, H. (2014). Differential effects of atmospheric cues on emotions and loyalty intention with respect to age under online/offline environment. *Journal of Retailing and Consumer Services, 21*(2), 211-219.

Loureiro, S.M.C., Guerreiro, J., Eloy, S., and Langaro, D. (2019). Understanding the use of virtual reality in marketing: A text mining-based review. *Journal of Business Research, 100,* 514-530. https://doi.org/10.1016/j.jbusres.2018.10.055

Loureiro, S.M.C. (2019). Exploring the role of atmospheric cues and authentic pride on perceived authenticity assessment of museum visitors. *International Journal of Tourism Research, 21,* 413-426.

Loureiro, S.M.C. (2015). The role of website quality on PAD, attitude and intentions to visit and recommend island destination. *International Journal of Tourism Research, 17*(6), 545-554.

Loureiro, S.M.C. (2014). The role of the rural tourism experience economy in place attachment and behavioural intentions. *International Journal of Hospitality Management, 40,* 1-9.

Low, K.E.Y. (2015). The sensuous city: Sensory methodologies in urban ethnographic research. *Ethnography, 16*(3), 295-312.

Lu, Y., and Smith, S. (2007). Augmented reality e-commerce assistant system: Trying while shopping. *Lecture Notes in Computer Science, 4551,* 643-652.

Lukka, K., and Modell, S. (2010). Validation in interpretive management accounting research. *Accounting, Organizations and Society, 35*(4). 462-477.

Machleit, K.A., Eroglu, S.A., and Mantel, S.P. (2000). Perceived retail crowding and shopping satisfaction: What modifies this relationship? *Journal of Consumer Psychology, 9*(1), 29-42.

Machleit, K.A., and Eroglu, S.A. (2000). Describing and measuring emotional response to shopping experience. *Journal of Business Research, 49*(2)*,* 101-111.

Madsen, H. (1992). Place marketing in Liverpool: A review. *International Journal of Urban and Regional Research, 16*(4)*,* 633-640.

Maduku, D.K., Mpinganjira, M., and Duh, H. (2016). Understanding mobile marketing adoption intention by South African SMEs: A multi-perspective framework. *International Journal of Information Management, 36(*5), 711-723.

Mahatanankoon, P. (2007). The effects of personality traits and optimum stimulation level on text-messaging activities and m-commerce intention. *International Journal of Electronic Commerce, 12*(1), 7-30. https://doi.org/10.2753/JEC1086-4415120101

Maitland, R., and Ritchie, B.W. (2007). Editorial: Marketing national capital cities. *Journal of Travel and Tourism Marketing, 22*(3-4), 1-5.

Malpas, J.E. (1999). *Place and Experience: A Philosophical Topography.* Cambridge: Cambridge University Press.

Mandelbaum, A. (2015). How companies are marketing with virtual reality. *Chief Marketer.* Retrieved from https://www.chiefmarketer.com/companies-marketing-virtual-reality/

Manganari, E.E., Siomkos, G.J., Rigopoulou, I.D., and Vrechopoulos, A.P. (2011). Virtual store layout effects on consumer behaviour: Applying an environmental psychology approach in the online travel industry. *Internet Research, 21*(3), 326-346.

Mann, M.K., Liu-Thompkins, T., Watson, G.S., and Papelis, Y.E. (2015). A multi-disciplinary examination of 3D virtual shopping environments: Effects on consumer perceptual and physiological responses. In K. Kubacki (Ed.), *Ideas in Marketing: Finding the New and Polishing the Old* (pp. 752-755). Springer International Publishing.

Manis, K.T., and Choi, D. (2019). The virtual reality hardware acceptance model (VR-HAM): Extending and individuating the technology acceptance model (TAM) for virtual reality hardware. *Journal of Business Research, 100,* 503-513. https://doi.org/10.1016/j.jbusres.2018.10.021

Mano, H. (1999). The influence of pre-existing negative effect on store purchase intentions. *Journal of Retailing, 75* (2), 149-172.

Marangunic, N., and Granic, A. (2014). Technology Acceptance Model: A literature review from 1986 to 2013. *Universal Access in the Information Society, 14*(1), 81-95.

Marasco, A., Buonincontri, P., van Niekerk, M., Orlowski, M., and Okumus, F. (2018). Exploring the role of next-generation virtual technologies in destination marketing. *Journal of Destination Marketing and Management, 9,* 138-148. https://doi.org/10.1016/j.jdmm.2017.12.002

Marchiori, E., Niforatos, E., and Preto, L. (2017). Measuring the media effects of a tourism-related virtual reality experience using biophysical data. In. R. Schegg and B.Stangl (Eds.). *Information and Communication Technologies in Tourism 2017* (pp.203-215). Cham, Switzerland: Springer.

Marcoulides, G.A., and Saunders, C. (2006). Editor's comments – PLS: A silver bullet? *MIS Quarterly, 30*(2), iii-ix.

Mari, M., and Pogessi, S. (2011). Servicescape cues and customer behaviour: A systematic literature review and research agenda. *The Service Industries Journal*, *33*(2), 171-199.

Marketing Cheshire. (2015). Destination Management Plan – 2015-2018. Discover Cheshire. Retrieved from http://www.marketingcheshire.co.uk/wp-content/uploads/2015/07/Cheshire-Destination-Management-Plan-2015-2018.pdf

Martins, J., Gonçalves, R., Branco, F., Barbosa, L., Melo, M., and Bessa, M. (2017). A multisensory virtual experience model for thematic tourism: A port wine tourism application proposal. *Journal of Destination Marketing and Management, 6*(2)*,* 103-109.

Martinez-Navarro, J., Bigne, E., Guixeres, J., Alcaniz, M., and Torrecilla, C. (2019). The influence of virtual reality in e-commerce. *Journal of Business Research, 100*, 475-482. https://doi.org/10.1016/j.jbusres.2018.10.054

Mauss, I. B., and Robinson, M. D. (2009). Measures of emotion: A review. *Cognition and Emotion, 23*(2), 209-237.

McCamley, C., Gilmore, A., and McCartan-Quinn, D. (2012). The role of destination marketing organisation in strategic marketing management for tourism. In: *Proceedings of the Academy of Marketing Conference (2012),* Marketing Catching the Technology Wave, Academy of Marketing.

McCauley, M.E., and Sharkey, T.J. (2006). Cybersickness: Perception of self-motion in virtual environments. *Presence: Teleoperators and Virtual Environments, 1*(3), 311-318. https://doi.org/10.1162/pres.1992.1.3.311

McGehee, N.G., Boley, B.B., Hallo, J.C., McGee, J.A., Norman, W., Oh, C.O., and Goetcheus, C. (2013). Doing sustainability: An application of an interdisciplinary and mixed-method approach to a regional sustainable tourism project. Journal of

Sustainable Tourism, 21(3), 355-375. https://doi-org.mmu.idm.oclc.org/10.1080/09669582.2012.709862

McGill, M., Boland, D., and Murray-Smith, R. (2015). A dose of reality: Overcoming usability challenges in VR Head-mounted displays. In *CHI 2015, Seoul, Republic of Korea, 18-23 April 2015* (pp. 2143-2152).

McGoldrick, P.J., and Pieros, C.P. (1998). Atmospherics, pleasure and arousal: The influence of response moderators. *Journal of Marketing Management, 14*(1-3), 173-197. https://doi.org/10.1362/026725798784959372

McGoldrick, P. (2002). *Retail Marketing* (2nd ed.). London: McGraw-Hill.

McGoldrick, P.J., and Pieros, C.P. (1998). Atmospherics, pleasure and arousal: The influence of response moderators. *Journal of Marketing Management, 14*(1-3), 173-197. https://doi-org.mmu.idm.oclc.org/10.1362/026725798784959372

McKone, D., Haslehurst, R., Steingoltz, M. (2016). Virtual and augmented reality will reshape retail. *Harvard Business Review.* Retrieved from https://hbr.org/2016/09/virtual-and-augmented-reality-will-reshape-retail

McIntyre, C. (2012). *Tourism and retail: the psychogeography of liminal consumption.* London: Routledge.

McKinney, L.N. (2004). Creating a satisfying internet shopping experience via atmospheric variables. *International Journal of Consumer Studies, 28*(3), 268-283.

Mehrabian, A., and Russell, J. (1974). *An approach to environmental psychology.* Boston: MIT Press.

Meibner, M., Pfeiffer, J., Pfeiffer, T., and Oppewal, H. (2019). Combining virtual reality and mobile eye tracking to provide naturalistic experimental environment for shopper research. *Journal of Business Research, 100,* 445-458.

Merrilees, B., Miller, D., and Herington, C. (2009). Antecedents of residents' city brand attitudes. *Journal of Business Research, 62*(3), 362-267.

Mestre, D.R. (2018). *Immersion and presence,* 1-10.

Metaxas, T. (2010). Cities competition, place marketing and economic development in south Europe: The Barcelona case as FDI destination. *Theoretical and Empirical Researches in Urban Management, 5*(14), 5-19.

Michel, A., Baumann, C., and Gayer, L. (2017). Thank you for the music or not? The effects of in-store music in service settings. *Journal of Retailing and Consumer Services, 36*(C), 21-32. https://dx.doi.org/10.1016/j.jretconser.2016.12.008

Microsoft. (2017). What is a hologram? *Microsoft.* Retrieved from https://docs.microsoft.com/en-us/windows/mixed-reality/hologram

Milgram, P., and Kishino, F. (1994). A taxonomy of mixed reality visual displays. *IEICE Transactions on Information and Systems, 77*(12), 1321-1329.

Miller, R.L., and Brewer, J. (2003). *A-Z of Social Science Research.* Sage Research Methods: London. https://dx.doi.org/10.4135/9780857020024

Miller, N.J., and Kean, R.C. (1997). Factors contributing to inshopping behaviour in rural trade areas: Implications for local retailers. *Journal of Small Business Management, 35*(2), 80-94.

Mills, A.J., Durepos, G., and Wiebe, E. (2010). *Encyclopaedia of case study research.* Thousand Oaks, CA: SAGE Research Methods.

Mishra, H.G., Sinha, P.K., and Surabhi, K. (2014). Impact of Store Atmospherics on Customer Behavior: Influence of Response Moderators. *Journal of Business and Management, 20*(1), 45-65.

Mitchell, A., and Kirkup, M. (2003). Retail development and urban regeneration. *International Journal of Retail and Distribution Management, 31*(9), 459-465.

Miltgen, C.L., Popovic, A., and Oliveira, T. (2013). Determinants of end-user acceptance of biometrics: Integrating the 'Big 3' of technology acceptance with privacy context. *Decision Support Systems, 56,* 103-114.

Mizell, D., Jones, S.P., Slater, M., and Spanlang, B. (2002). *Comparing immersive virtual reality with other display modes for visualising complex 3D geometry.* London: University College London, Department of Computer Science.

Moorhouse, N., tom Dieck, M.C., and Jung, T. (2018). Technological innovations transforming the consumer retail experience: A review of literature. In T. Jung, and M. tom Dieck (Eds.), *Augmented Reality and Virtual Reality.* Progress in IS. Cham, Switzerland: Springer.

Morrell, M. (2012). The future of retail. Retrieved from www.driversofchange.com/

Morgan, D.L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research, 8*(3), 362-376. https://doi.org/10.1177/104973239800800307

Morrin, M., and Ratneshwar, S. (2000). The impact of ambient scent on evaluation, attention and memory for familiar and unfamiliar brands. *Journal of Business Research, 49*(2), 157-165.

Morrison, M., Gan, S., Dubelaar, C., and Oppewal, H. (2011). In-store music and aroma influences on shopper behaviour and satisfaction. *Journal of Business Research, 64*(6), 558-564.

Morrison, A., and Anderson, D. (2002). Destination branding. Cited in Qu, H., Kim, L.H., and Im, H.H. (2011). A model of destination branding: Integrating the concepts of the branding and destination image. *Tourism Management, 32,* 465-476.

Mossberg, L. (2007). A marketing approach to the tourist experience. *Scandinavian Journal of Hospitality and Tourism, 7*(1), 59-74.

Mummalaneni, V. (2005). An empirical investigation of web site characteristics, consumer emotional states and on-line shopping behaviours. *Journal of Business Research, 58*(4), 526-532.

Munar, A.M. (2016). Surviving metamorphosis. *Tourism Recreation Research, 41*(3), 358-361.

Mura, P., Tavakoli, R., and Sharif, S.P. (2016). 'Authentic but not too much': Exploring perceptions of authenticity of virtual tourism*. Information Technology and Tourism, 17*(2), 145-150. https://dx.doi.org/10.1007/s40558-016-0059-y

Musterd, S., and Kovács, Z. (2013). *Place-making and policies for competitive cities.* Wiley, Blackwell: West Sussex, UK.

Murphy, P., Pritchard, M.P., and Smith, B. (2000). The destination product and its impact on traveller perceptions. *Tourism Management, 21*(1), 43-52.

Nagai, H., Doering, A., and Yashima, Y. (2018). The emergence of the DMO concept in Japan: Confusion, contestation and acceptance. *Journal of Destination Marketing and Management, 9,* 377-380.

Najafi, M., Shariff, M.K.B.M. (2011). The concept of place and sense of place in architectural studies. *International Journal of Humanities and Social Sciences, 5*(8), 1054-1060.

Nasar, J. L. (1990). The evaluative image of the city. *Journal of the American Planning Association, 56*(1), 41-53.

Needel, S.P. (1998). Understanding consumer response to category management through virtual reality. *Journal of Advertising Research, 38,* 61-67.

Neimeier, S., Zocchi, A., and Catena, M. (2013). *Reshaping retail: Why technology is transforming the industry and how to win in the new consumer driven world.* Chichester, UK: Wiley and Sons Ltd.

Neuhofer, B., Buhalis, D., and Ladkin, A. (2012). Conceptualising technology enhanced destination experiences. *Journal of Destination Marketing and Management, 1*(1-2), 36-46.

Neuman, W.L. (2006). *Social research methods: qualitative and quantitative approaches* (6th ed.). Pearson Education, Inc. Boston.

Nichols, S., and Patel, H. (2002). Health and safety implications of virtual reality: A review of empirical evidence. *Applied Ergonomics, 33*(3), 251-271.

Nichols, S., Haldane, C., and Wilson, J. R. (2000). Measurement of presence and its consequences in virtual environments. *International Journal of Human-Computer Studies, 52*(3), 471-491. http://dx.doi.org/10.1006/ijhc.1999.0343

Nichols, S., Haldane, C., and Wilson, J. R. (2000). Measurement of presence and its consequences in virtual environments. *International Journal of Human-Computer Studies, 52*(3), 471–491.

Nicoletta, R., and Servidio, R. (2012). Tourists' opinions and their selection of tourism destination images: An affective and motivational evaluation. *Tourism Management Perspectives, 4,* 19e27.

Nielsen. (2017a). Young and ready to travel (and shop): A look at millennial travellers. Millennial Traveller Study Report. *Nielsen.* Retrieved from https://www.nielsen.com/us/en/insights/report/2017/young-and-ready-to-travel-and-shop/

Nielsen. (2017a). Infographic: Virtual Reality stats that every business leader should see. *Nielsen.* Retrieved from https://www.vertexvr.nl/infographic-virtual-reality-stats-every-business-leader-see/

Nieswiadomy, R.M. (2002). *Foundation of nursing research* (4th ed.). Upper Saddle River, NJ: Pearson Education.

Nilsson, E., and Ballantyne, D. (2014). Re-examining the place of servicescape in marketing: a service-dominant logic perspective. *Journal of Services Marketing, 28*(5), 374-379.

Novak, T.P., Hoffman, D.L., and Yung, Y.F. (2000). Measuring the customer experience in online environments: A structural modelling approach. *Marketing Science, 19*(1), 22-42.

Nysveen, H., Pedersen, P.E., and Thorbjørnsen, H. (2005). Intentions to use mobile services: antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science,* 33(3), 330-46.

Oggionni, T., and Kwok, L. (2018). A qualitative inquiry of DMO services to hotels: How valuable are they perceived? *Journal of Destination Marketing and Management, 9,* 85-96. https://dx.doi.org/10.1016/j.jdmm.2017.11.003

Ogonowski, A., Montandon, A., Botha, E., and Reyneke, M. (2014). Should new online stores invest in social presence elements? The effect of social presence on initial trust formation. *Journal of Retailing and Consumer Services, 21,* 482-491.

Oh, H., Fiore, A.M., and Jeoung, M. (2007). Measuring experience economy concepts: Tourism applications. *Journal of Travel Research, 46*(2), 119-132.

Oh, H., Yoon, S. Y., and Shyu, C. R. (2008). How can virtual reality reshape furniture retailing? *Clothing and Textiles Research Journal, 26*(2), 143-163.

Olsson, T., Savisalo, S., Hakkarainen, M., and Woodward, C. (2012). User evaluation of mobile augmented reality in architectural planning. *Proceedings of ECPPM, 12*(7), 733-740.

ONS. (2016). *Internet access – households and individuals: 2016.* ONS Statistical Bulletin, August 2016.

Oxford Reference. (2019). Sensory conflict theory. *Oxford Reference.* Retrieved from https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100454911

Ozturk, A.B., Nusair, K., Okumus, F., and Hua, N. (2016). The role of utilitarian and hedonic values on users' continued usage intention in a mobile hotel booking environment. *International Journal of Hospitality Management, 57,* 106-115. https://doi.org/10.1016/j.ijhm.2016.06.007

Packer, M. (2011). *The Science of Qualitative Research.* Cambridge: Cambridge University Press.

Page, S.J., and Hall, C.M. (2003). *Managing urban tourism.* Harlow: Prentice Hall.

Page S.J., and Hardyman, R. (1996). Place marketing and town centre management: A new tool for urban revitalisation. *Cities, 13*(3), 153-164.

Pan, L., Zhang, M., Gursoy, D., and Lu, L. (2017). Development and validation of a destination personality scale for mainland Chinese travellers. *Tourism Management, 59,* 338–348.

Pantano, E. (2014). Innovation drivers in retail industry. *International Journal of Information Management, 34*(3), 344-350.

Pantano, E., and Corvello, V. (2014). Tourists' acceptance of advanced technology-based innovations for promoting arts and culture. *International Journal of Technology Management, 64*(1), 3-16. https://dx.doi.org/10.1504/IJTM.2014.059232

Pantano, E., Priporas, C. V., Sorace, S., and Iazzolino, G. (2017). Does innovation-orientation lead to retail industry growth? Empirical evident from patent analysis. *Journal of Retailing and Consumer Services*, 34(C), 88-94.

Pantano, E., and Laria, G. (2012). Innovation in retail process: From consumers' experience to immersive store design. *Journal of Technology Management and Innovation, 7*(3), 198-206.

Papagiannidis, S., See-To, E., and Boulakis, M. (2014). Virtual test-driving: The impact of simulated products on purchase intentions. *Journal of Retailing and Consumer Services, 21*(5)*,* 877-887.

Papazafeiropoulou, A., and Pouloudi, N. (2000). The government's role in improving electronic commerce adoption. In *Proceedings of the 8th European Conference on Information Systems, Trends in Information and Communication Systems for the 21st Century, ECIS 2000, Vienna, Austria, July 3-5.*

Paradis, T.W. (2004). Theming, tourism, and fantasy city. In A.A. Lew. C.M. Hall. and A.M. Williams (Eds.), *A companion to tourism* (pp.195-209). London: Blackwell.

Parasuraman, A., Zeithaml, V.A., and Berry, L.L. (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing,* 64(1), 14-40.

Parasuraman, A., Zeithaml, V.A., and Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing, 49*(4), 41-50. https://dx.doi.org/10.2307/1251430

Pearson, J.M., Pearson, A., and Green, D. (2007). Determining the importance of key criteria in web usability. *Management Research News, 30*(11), 81-828.

Peat, J., Mellis, C., Williams, K., and Xuan W. (2002). *Health Science Research: A Handbook of Quantitative Methods.* London: Sage.

Penz, E., and Hogg, M. (2011). The role of mixed emotions in consumer behaviour. *European Journal of Marketing, 45*(1-2), 104-132. https://doi.org/10.1108/03090561111095612

Petruzzellis, L., Chebat, J.C., and Palumbo, A. (2018). Paradoxical effects of famous music in retail venues. *Journal of Consumer Behaviour, 17*(2), 161 - 174.

Peyroux, E., Pütz, R., and Gasze, G. (2012). Business improvement districts (BIDs): The internationalisation and contextualisation of a 'travelling concept'. *European Urban and Regional Studies, 19*(2), 111-120.

Picken, F. (2017). The interview in tourism research. In W. Hillman and K, Radel. (2017). *Qualitative Tourism Methods* (1st ed.). Channelview.

Pike, S., and Ives, C. (2018). The restructuring of New Zealand's regional tourism organisations. *Journal of Destination Marketing and Management, 9,* 371-373. https://doi.org/10.1016/j.jdmm.2017.11.005

Pine, B. L., and Gilmore, J. H. (1999). *The Experience Economy: Work is Theatre and Every Business a Stage.* Harvard Business Press.

Pine, B. L., and Gilmore, J. H. (1998). The Experience Economy. *Harvard Business Review, 76*(6), 97-105.

Pitt, M., and Musa, Z. N. (2009). Towards defining shopping centres and their management systems. *Journal of Retail and Leisure Property, 8*(1), 39-55. https://doi.org/10.1057/rlp.2008.25

Pizzi, G., Scarpi, D., Picherri, M., and Vannucci, V. (2019). Virtual reality, real reactions?: Comparing consumers' perceptions and shopping orientation across physical and virtual-reality retail stores. *Computers in Human Behaviour, 96,* 1-12. https://doi.org/10.1016/j.chb.2019.02.008

Plutchik, R. (1980). *Emotion: Theory, research, and experience* (1st ed.). New York: Academic Press.

Podsakoff, P.M., MacKenzie, S.B., and Lee, J.Y. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Poldma, T. (2017). Communication and stakeholders. In A. Petermans, and A. Kent (Eds.), *Retail Design: Theoretical Perspectives* (pp. 153-172). Oxon: Routledge.

Polit, D.E., and Beck, C.T. (2006). *Essentials of nursing research* (6th ed.). Lippincrott Williams and Wilkins: Philadelphia.

Polit, D.F., Beck, C.T., and Owen, S.V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing and Health, 30*(4), 459-467.

Ponelis, S. R. (2015). Using interpretive qualitative case studies for exploratory research in doctoral studies: A case of information systems research in small and medium enterprises. *International Journal of Doctoral Studies, 10*, 535-550.

Portas, M. (2011). *The Portas review an independent review into the future of our high streets.* London: Department for Communities and Local Government.

Potter, L.E., Carter, L., and Coghlan, A. (2016). Virtual reality and nature-based tourism: An opportunity for operators and visitors. *OzCHI '16 Proceedings of the 28th Australian Conference on Computer-Human Interaction,* 652-654.

Pouder, R.W., Clark, J.D., and Fenich, G.G. (2018). An exploratory study of how destination marketing organisations pursue the sports tourism market. *Journal of Destination Marketing and Management, 9,* 184-193. https://doi.org/10.1016/j.jdmm.2018.01.005

Poushneh, A. (2018). Augmented reality in retail: A trade-off between user's control of access to personal information and augmentation quality. *Journal of Retailing and Consumer Services, 41*, 169-176.

Prashar, S., Vijay, S., and Parsad, C. (2017). Effects of online shopping values and website cues on purchase behaviour: A study using S-O-R framework. *The Journal for Decision Makers, 42*(1), 1-18. https://dx.doi.org/10.1177/0256090916686681

Price, S., Jewitt, C., and Brown, B. (2013). *The SAGE Handbook of Digital Technology Research.* London: Sage Publications.

Prilenska, V. (2012). City branding as a tool for urban regeneration: Towards a theoretical framework. *Architecture and Urban Planning,* 12-16.

Puccinelli, N.M., Goodstein, R.C., Grewal, D., Price, R., Raghubir, P., and Stewart, D. (2009). Customer experience management in retailing: Understanding the buying process. *Journal of Retailing, 85*(1)*,* 15-30.

Puyana-Romero, V., Lopez-Segura, L.S., Maffei, L., Hernández-Molina, R., and Masullo, M. (2017). Interactive soundscapes: 360-degree-video based immersive virtual reality in a tool for the participatory acoustic environment evaluation of urban areas. *Acta Acustica United with Acustica, 103*(4), 574-588.

Qu, H., Kim, L.H., and Im, H.H. (2011). A model of destination branding: Integrating the concepts of the branding and destination image. *Tourism Management, 32*(3), 465-476.

Qui, L., and Benbasat, I. (2005). An investigation into the effects of text-to-speech voice and 3D avatars on the perception of presence and flow of live help in electronic commerce. *ACM Transactions on Computer Human Interaction (TOCHI), 12*(4), 329-355.

Quinn, B. (2017). Buying into the future. *Frame Lab,* 166-171.

Rabbiosi, C. (2011). The invention of shopping tourism. The discursive repositioning of landscape in an Italian retail-led case. *Journal of Tourism and Cultural Change, 9*(2), 70-86.

Radde, B. (2017). *Digital guest experience: Tools to help hotels to manage and optimise the digital guest experience.* Hamburg, Germany: Tredition GmbH.

Rafaeli, A., Altman, D., and Gremler, D. D., Huang, M. H., Grewal, D., Iyer, B., Parasuraman, A., and de Ruyter, K. (2017). The future of frontline research. *Journal of Service Research, 20*(1), 91–99.

Rainoldi, M., Driescher, V., Lisnevska, A., Zvereva, D., Stavinska, A., Relota, J., and Egger, R. (2018). Virtual reality: An innovative tool in destination marketing. *The Gaze, Journal of Tourism and Hospitality, 9,* 53-68. https://doi.org/10.3126/gaze.v9i0.19721

Ramkissoon, H., Smith, L.D.G., and Weiler, B. (2013). Testing the dimensionality of place attachment and its relationships with place satisfaction and pro-environmental behaviours: A structural equation modelling approach. *Tourism Management, 36,* 552-566. https://doi.org/10.1016/j.tourman.2012.09.003

Ranaweera, C., Bansal, H., and McDougall, G. (2008). Web site satisfaction and purchase intentions. *Managing Service Quality: An International Journal, 18*(4), 329-348. https://doi-org.ezproxy.mmu.ac.uk/10.1108/09604520810885590

Rauschnabel, P.A., Reto, F., and Hinsch, C. (2019). Augmented reality marketing: How mobile AR-apps can improve brands through inspiration. *Journal of Retailing and Consumer Services, 49*(C), 43-53. https://dx.doi.org/10.1016/j.jretconser.2019.03.004

Rayburn, S.W., and Voss, K.E. (2013). A model of consumer's retail atmosphere perceptions. *Journal of Retailing and Consumer Services, 20*(4), 400-407. https://doi.org/10.1016/j.jretconser.2013.01.012

Reason, J.T., and Brand, J.J. (1975). *Motion sickness.* Oxford, England: Academic Press.

Reddy, R., Reddy, N., and Azeem, A. (2011). Role Of In-Store Lighting In Store Satisfaction. *International Journal of Business and Management Tomorrow, 1*(3), 115-122.

Rehan, R.M. (2016). The phonic identity of the city urban soundscape for sustainable spaces. *HBRC Journal, 12,* 337-349.

Reichheld, F.F. (2001). *The loyalty effect: The hidden force behind growth, profits and lasting value.* Cambridge, MA: Harvard Business Press.

Reichertz, J. (2014). Chapter 9: Induction, Deduction, Abduction. In. U, Flick (Ed.). *The SAGE Handbook of Qualitative Data Analysis. Sage Research Methods.* https://dx.doi.org/10.4135/9781446282243.n9

Reimer, A., and Kühn, R. (2005). The impact of servicescape on quality perception European *Journal of Marketing, 39*(7-8), 785-808. https://dx.doi.org/10.1108/03090560510601761

Reinhold, S., Laesser, C., and Beritelli, P. (2015). 2014 St. Gallen consensus on destination management. *Journal of Destination Marketing and Management, 4*(2), 137-142.

Relph, E. (1976). *Place and placelessness.* London: Pion.

Rese, a., Baier, D., Geyer-Schulz, A., Schreiber, S. (2017). How augmented reality apps are accepted by consumers: A comparative analysis using scales and opinions. *Technological Forecast and Societal Change, 124,* 306-319.

Rese, A., Schreiber, S., and Baier, D. (2014). Technology acceptance modelling of augmented reality at the point of sale: Can surveys be replicated by an analysis of online reviews? *Journal of Retailing and Consumer Services, 21*(5), 869-876.

Revicki, D. (2014). Internal consistency reliability. In A.C. Michaelos (Ed.), *Encyclopaedia of Quality of Life and Well-Being Research.* Dordrecht: Springer. https://doi.org/10.1007/978-94-007-0753-5_1494

Rex, D., and Blair, A. (2003). Unjust des(s)erts: Food retailing and neighbourhood health in Sandwell. *International Journal of Retail Distribution Management, 31*(9), 459-465.

Rheingold, H. (1991). *Virtual reality.* New York: Simon and Schuster, Inc.

Riach, K., and Warren, S. (2014). Smell organisation: Bodies and corporeal porosity in office work. *Human Relations, 68*(5), 789-809. https://doi-org.mmu.idm.oclc.org/10.1177/0018726714545387

Richards, G. (2001). The experience industry and the creation of attractions. In G. Richards (Ed.), *Cultural Attractions and European Tourism* (pp. 55-69). Oxfordshire, UK: CABI Publishing.

Richard, M.O. (2005). Modelling the impact of internet atmospherics on surfer behaviour. *Journal of Business Research, 58*(12), 1632-1642.

Ritchie, J.R.B., and Crouch, G.I. (2003). *The competitive destination: A sustainable tourism perspective.* Wallingford, UK: CABI.

Ritchie, J. B., and Crouch, G. I. (2010). A model of destination competitiveness/sustainability: Brazilian perspectives. *RAP, 44*(5), 1049-66.

Rittichainuwat, B., and Raatanaphinanchai, S. (2015). Applying mixed method of quantitative and qualitative design in explaining the travel motivation of film tourists in visiting a film-shooting destination. *Tourism Management, 46,* 136-147. https://doi.org/10.1016/j.tourman.2014.06.005

Riva, G., Mantovani, F., Capideville, C.S., Preziosa, A., Morganti, F., Villani, D., Gaggilo, A., Botella, C., Alcañiz, M. (2007). Affective interactions using virtual reality: The

link between presence and emotions. *Cyberpsychology and Behaviour, 10*(1), 45-56. https://doi.org/10.1089/cpb.2006.9993

Robertson, K.A. (1993). Pedestrianisation strategies for downtown planners: Skywalks versus pedestrian malls. *Journal of the American Planning Association, 59,* 361-370.

Robertson, J., and Fennell, J. (2007). The economic effects of regional shopping centres. *Journal of Retail and Leisure Property, 6,* 149–170. https://doi.org/10.1057/palgrave.rlp.5100057

Rodaway, P. (1994). *Sensuous Geographies.* London: Routledge.

Rogers, E. M. (2003) *Diffusion of Innovations* (5th Ed.). New York: Free Press.

Romão, J., Kourtit, K., Neuts, B., and Nijkamp, P. (2018). The smart city as a common place for tourists and residents: A structural analysis of the determinants of urban attractiveness. *Cities, 78,* 67-75.

Rose, S., Clark, M., Samouel, P., and Hair, N. (2012). Online customer experience in e-retailing: An empirical model of antecedents and outcomes. *Journal of Retailing, 88*(2), 308-322.

Rosenbaum, M.S., Kelleher, C., Friman, M., Kristensson, P., and Scherer, A. (2017). Re-placing place in marketing: A resource-exchange place perspective. *Journal of Business Research, 79*, 281-289. https://doi.org/10.1016/j.jbusres.2017.01.009

Rosenbaum, M. S., and Massiah, C. (2011). An expanded servicescape perspective. *Journal of Service Management, 22*(4), 471-490. https://doi.org/10.1108/09564231111155088

Roschk, H., Loureiro, S.M.C., and Breitsohl, J. (2017). Calibrating 30 Years of Experimental Research: A Meta-Analysis of the Atmospheric Effects of Music, Scent, and Color. *Journal of Retailing, 93*(2), 228-240. https://doi.org/10.1016/j.jretai.2016.10.001

Roult, R., Adjizian, J.M., and Auger, D. (2016). Tourism conversion and place branding: The case of the Olympic Park in Montreal. *International Journal of Tourism Cities, 2*(1), 77-93.

Rubio, D.M., Berg-Weger, M., Tebb, S.S., Lee, E.S., and Rauch, S. (2003). Objectifying content validity: Conducting a content validity study in social work research. *Social Work Research, 27*(2), 94-104. https://doi.org/10.1093/swr/27.2.94

Rudd, M., Vohs, K.D., and Aaker, J. (2012). Awe expands people's perception of time, alters decision making, and enhances well-being. *Psychological Science, 23*(1), 1130-1136. https://dx.doi.org/10.1177/0956797612438731

Ruel, E., Wagner, W.E., and Gillespie, B.J. (2015). *The practice of survey research.* Sage Publications Inc.

Ruffin, F. (2008). Professionalising business district management for the twenty-first century. *Journal of Place Management and Development, 1*(1), 29-45.

Runyan, R. C., and Huddleston, P. (2006). Getting customers downtown: The role of branding in achieving success for central business districts. *Journal of Product and Brand Management, 15*(1), 48-61.

Rusko, R. (2014). Shopping centres and tourism destinations: similarities and differences according to cases in Finland. *Managing Leisure, 19*(1), 71-87.

Russell, J. A., and Snodgrass, J. (1987). Emotion and the environment. In D. Stokols. and I. Altman (Eds.), *Handbook of Environmental Psychology* (pp. 245-280). New York: Wiley.

Ryan, G. W., and Bernard, H. R. (2000). Data management and analysis methods. In K. Denzin, and Y. S. Lincoln, *Handbook of Qualitative Research* (2 ed.) (pp. 769-802). Thousand Oaks, CA: SAGE.

Ryan, B., Scapens, R.W., and Theobald, M. (2002), Research Method and Methodology in Finance and Accounting (2nd Ed.). London: Thomson.

Sachdeva, I., and Goel, S. (2015). Retail store environment and customer experience: a paradigm. *Journal of Fashion Marketing and Management, 19*(3), 290-298.

Sahoo, D., and Pillai, S. (2017). Role of mobile banking servicescape on customer attitude and engagement. *International Journal of Bank Marketing, 35*(7), 1115-1132. https://doi.org/10.1108/IJBM-09-2015-0144

Sack, R. (1997). *Homo Geographies.* Baltimore: Johns Hopkins University Press.

Sale, J.E.M., Lohfeld, L.H., and Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality and Quantity, 36*(1), 43-53.

Samaradiwakara, G. D., and Gunawardena, C. G. (2014). Comparison of existing technology acceptance theories and models to suggest a well improved theory/model. *International Technical Sciences Journal (ITSJ), 1*(1), 21-36.

Sammy, C.H.L., Robinson, P., and Oriade, A. (2017). Destination marketing: The use of technology since the millennium. *Journal of Destination Marketing and Management, 6*(2), 95-102.

Sanyal, P., and Ghosh, A. (2017). *Attractiveness of retail agglomeration based on product type: An experimental study.* SSRN.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., and Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualisation and operationalisation. *Quality and Quantity, 52*(4), 1893-1907. https://dx.doi.org/10.1007/s11135-017-0574-8

Saunders, M., Lewis, P., and Thornhill, A. (2016). *Research Methods for Business Students* (7th ed.). Pearson Education Limited: Harlow, UK.

Sayre, S. (2001). *Qualitative Methods for Marketplace Research.* London: SAGE.

Sautter, P., Hyman, M.R., and Lukošius, V. (2004). E-tail atmospherics: A critique of the literature and model extension. *Journal of Electronic Commerce Research, 5*(1), 14-24.

Scaramanga, M. (2012). Talking about art(s) – A theoretical framework clarifying the association between culture and place branding. *Journal of Place Management and Development, 5*(1), 70-80.

Schafer, R.M. (1977). *The soundscape: Our sonic environment and the tuning of the world.* Rochester, VT: Destiny Books.

Schmitt, B. (1999). Experiential Marketing: A new framework for design and communications. *Design Management Journal, 10*(2), 10-16.

Schnack, A., Wright, M.J., and Holdershaw, J.L. (2019). Immersive virtual reality technology in a three-dimensional virtual simulated store: Investigating telepresence and usability. *Food Research International, 117,* 40-49. https://doi.org/10.1016/j.foodres.2018.01.028

Schneider, R.J. (2015). Walk or drive between stores? Designing neighbourhood shopping districts for pedestrian activity. *Journal of Urban Design, 20*(2), 212-229. https://doi.org/10.1080/13574809.2015.1009014

Schubert, T., Friedmann, F., and Regenbrecht, H. (2001). The experience of presence: Factor analytic insights. *Presence, 10*(3), 266-281.

Schuemie, M.J., van der Straaten, P., Krijn, M., and van der Mast, C.A.P.G. (2001). Research on presence in virtual reality: A survey. *CyberPsychology and Behaviour, 4*(2), 183-201.

Schumacker, R.E., and Lomax, R.G. (2012). *A Beginner's Guide to Structural Equation Modeling* (3rd ed.). Routledge.

Seidman, Z., McNamara, R., Wootton, S., Leung, R., Spencer, L, Dale, M., Dennis, S., and McKeough, Z. (2017). People attending pulmonary rehabilitation demonstrate a substantial engagement with technology and willingness to use telerehabilitation: A survey. *Journal of Physiotherapy, 63*(3), 175-181. https://doi.org/10.1016/j.jphys.2017.05.010

Sen, S., Block, L. G., and Chandran, S. (2001). Window-displays and consumer shopping decisions. *Journal of Retailing and Consumer Services, 9*(5), 277-290.

Selby, M. (2004). *Understanding urban tourism: Image, culture and experience.* London: IB Tauris.

Seshanna, S. (2015). *Retail Management.* India: McGraw-Hill Education.

Shackel, B. (1991). Usability - context, framework, definition, design and evaluation. In B. Shackel. and Richardson, S.J. (Eds.), *Human Factors for Informatics Usability* (pp. 21-37). New York: Cambridge University Press.

Shiau, W.L., Huang, L.C., and Cheng, Y.L. (2017). Pokemon Go: A study on fit in virtual-reality integration. *PACIS 2017 Proceedings.* 141. http://aisel.aisnet.org/pacis2017/141

Shankar, V., Inman, J. J., Mantrala, M., Kelley, E., and Rizley, R. (2011). Innovations in shopper marketing: Current insights and future research issues. *Journal of Retailing, 87S*(1), S29-S42.

Sharma, R., and Mishra, R. (2014). A review of evolution of theories and models of technology adoption, *IMJ, 6*(2), 17-29.

Shaw, G., and Williams, A. (1992). Tourism, development and the environment: The eternal triangle. In C.P. Cooper and A. Lockwood (Eds.), *Progress in Tourism, Recreation and Hospitality Management* (4th ed.) (pp. 47-59). London: Belhaven.

Sheehan, L., Vargas-Sanchez, A., Presenza, A., and Abbate, T. (2016). The use of intelligence in tourism destination management: An emerging role for DMOs. *International Journal of Tourism Research, 18*(6), 549-557.

Sheridan, T.B. (1992). Musings on telepresence and virtual presence. *Presence Teleoperators and Virtual Environments, 1*(1), 120-126.

Sherman, B. (1992). Trust decay? *Computers.*

Sheng, X., Siguaw, J. A., and Simpson, P. M. (2016). Servicescape attributes and consumer well-being. *Journal of Services Marketing, 30*(7), 676-685.

Sheppard, M. (2015). *Essentials of urban design.* Australia: CSIRO Publishing.

Shih, E. (1998). Conceptualising consumer experience in cyberspace. *European Journal of Marketing,* 655-663.

Shin, D.H. (2017). The role of affordance in the experience of virtual reality learning: Technological and affective affordance in virtual reality. *Telematics and Informatics, 34*(8), 1826-1836.

Shin, D.H. (2009). The evaluation of user experience of the virtual world in relation to extrinsic and intrinsic motivation. *International Journal of Human-Computer Interaction, 25*(5), 530-553. https://dx.doi.org/10.1080/10447310902963951

Short, J.R., and Kim, Y.H. (1998). Urban crises/urban representations: Selling the city in difficult times. In T. Hall and P. Hubbard (Eds.), *The Entrepreneurial City: Geographies of Politics, Regimes and Representations* (pp. 55-75). Chichester, England: John Wiley.

Shoval, N., and Raveh, A. (2004). Categorization of tourist attractions and the modelling of tourist cities: based on the co-plot method of multivariate analysis. *Tourism Management, 25*(6), 741-750.

Siegrist, M., Ung, C.Y., Zank, M., Marinello, M., Kunz, A., Hartmann, C., and Menozzi, M. (2019). Consumers' food selection behaviours in three-dimensional (3D) virtual reality. *Food Research International, 117,* 50-59.

Sim, I., Ong, A., Agarval, A., Parsa, A., and Keivani, R. (2002). Singapore's competitiveness as a global city: Development strategy, institutions and business environment. *Cities, 20*(2), 115-127.

Simmel, G. (1997). Sociology of the senses. In F. Frisby, and M. Featherstone (Eds.), *Simmel on Culture.* London, England: Sage.

Simon, S.C., and Greitemeyer, T. (2019). The impact of immersion on the perception of pornography: A virtual reality study. *Computers in Human Behaviour, 93,* 141-148. https://doi.org/10.1016/j.chb.2018.12.018

Singh, B.P., Grover, P., and Kar, A.K. (2017). Quality in mobile payment service in India. *Conference on e-Business, e-Services and e-Society*. Cham, Switzerland, Springer, 183-193.

Singleton, A.D.L., Dolega, L., Riddlesden, D., and Longley, P.A. (2016). Measuring the spatial vulnerability of retail centres to online consumption through a framework of e-resilience. *Geoforum, 69*(1), 5-18. https://doi.org/10.1016/j.geoforum.2015.11.013

Sirgy, M.J., Grewal, D., Mangleburg, T.F., Park, J., Chon, K.S., Claiborne, C.B., Johar, J.S., and Berkman, H. (1997). Assessing the predictive validity of two methods of measuring self-image congruence. *Journal of the Academy of Marketing Science, 25*(229). https://doi.org/10.1177/0092070397253004

Skinner, H. (2008). The emergence and development of place marketing's confused identity. *Journal of Marketing Management, 24*(9-10), 915-928.

Slater, M., and Usoh, M. (1993). An experimental exploration of presence in virtual environment. *Department of Computer Science Technical Report No. 689.*

Slater, M., and Sanchez-Vives, M.V. (2016). Enhancing our lives with immersive virtual reality. *Frontiers in Robotics and AI, 3*(74), 1-18.

Smith, S. (2014). A sense of place: place, culture and tourism. *Tourism Recreation Research, 40*(2), 220-233.

Smyth, H. (1994). *Marketing the city: The role of flagship developments in urban regenerations*. London: E and F N Spon.

So, M.W.C., Wong, T.N.D., and Sculli, D. (2005). Factors affecting intentions to purchase via the internet. *Industrial Management and Data Systems, 105*(9), 1225-1244. https://doi.org/10.1108/02635570510633275

Sokolova, T. (2018). Urban signage design: Problems and prospects. *International Multi-Conference on Industrial Engineering and Modern Technologies*. https://dx.doi.org/10.1088/1757-899X/463/4/042002

Spangenberg, E.R., Grohmann, B., and Sprott, D.E. (2004). It's beginning to smell (and sound) a lot like Christmas: The interactive effects of ambient scent and music in a retail setting. *Journal of Business Research, 58*(11), 1583-1589. https://doi.org/10.1016/j.jbusres.2004.09.005

Stake, R. E. (2005). Qualitative Studies. In N. K. Denzin. and Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (pp. 443-466). Thousand Oaks, CA: SAGE.

Stamboulis, Y., and Skayannis, P. (2003). Innovation strategies and technology for experience-based tourism. *Tourism Management, 24*(1), 35-43.

Stangl, B., and Weismayer, C. (2008). Websites and virtual realities: a useful marketing tool combination? An exploratory investigation. In P. O'Connor. W. Hopken, and U. Gretzel (Eds.), *Information and communication technologies in tourism 2008* (pp. 141–151). New York: Springer.

Statista. (2016). Leading 20 retail centres in the United Kingdom (UK) 2014, by revenue. *Statista.* Retrieved from https://www.statista.com/statistics/291369/leading-retail-centres-ranking-by-revenue-in-the-united-kingdom-uk/

Statista. (2017). Projected economic impact of virtual and augmented reality technologies worldwide from 2016 to 2020. *Statista.* Retrieved from http://bit.ly/2NNW5ay

Statista. (2018a). Number of mobile phone users worldwide from 2015 to 2020 (in billions). *Statista.* Retrieved from https://www.statista.com/statistics/274774/forecast-of-mobile-phone-users-worldwide/

Statista. (2018b). Leading retail centers ranked by retail spend potential in Great Britain 2017. *Statista.* Retrieved from https://www.statista.com/statistics/805494/leading-retail-centers-by-retail-spend-potential-great-britain/

Statsoft. (2013). Structural equation modelling. *Statsoft electronic statistics textbook. Statsoft.* Retrieved from http://www.statsoft.com/textbook/structural-equation-modeling/

Stedman, R.C. (2011). Is it really just a social construction?: The contribution of the physical environment to sense of place. *Society and Natural Resources, 16(*8), 671-685.

Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of Communication, 42*(4), 73-93.

Streukens, S., and Leroi-Werelds, S. (2016). Bootstrapping and PLS-SEM: A step-by-step guide to get more out of your bootstrap results. *European Management Journal*, 1-15.

Stoel, L., Wickliffe, V., and Lee, K. H. (2004). Attribute beliefs and spending as antecedents to shopping value. *Journal of Business Research, 57*(10), 1067-1073.

Suh, Y. K., and McAvoy, L. (2005). Preferences and trip expenditure - a conjoint analysis of visitors to Seoul, Korea. *Tourism Management, 26*(3), 325-333.

Suh, K.S., and Lee, Y.E. (2005). The effects of virtual reality on consumer learning: An empirical investigation. *Management Information Systems Quarterly, 29*(4)*,* 673-697.

Suh, A., and Prophet, J. (2018). The state of immersive technology research: A literature analysis. *Computers in Human Behaviour, 86,* 77-90. https://doi.org/10.1016/j.chb.2018.04.019

Sumita, U., and Yoshii, J. (2010). Enhancement of e-commerce via mobile access to the Internet. *Electronic Commerce Research and Applications, 9*(3), 217-227. https://doi.org/10.1016/j.elerap.2009.11.006

Sun, K., Goensel, B.D., Filipan, K., Aletta, F., Renterghem, T.V., Pessemier, T.D., Joseph, W., and Bottledooren, D. (2019). Classification of soundscapes of urban public open spaces. *Landscape and Urban Planning, 189*(C)*,* 139-155.

Sundar, S.S. and Kim, J. (2005). Interactivity and persuasion. *Journal of Interactive Advertising, 5*(2), 5-18. https://doi.org/10.1080/15252019.2005.10722097

Sussmann, S., and Vanhegan, H. (2000). Virtual reality and the tourism product: Substitution or complement?. In H. R. Hansen, M. Bichler. and H. Mahrer (Eds.), *Proceedings of the 8th European conference on information systems, 2, (pp. 1077e1083).*

Sutcliffe, A.G., Poulis, C., Gregoriades, A., Katsouri, I., Tzanavari, A., and Herakleous, K. (2018). Reflecting on the design process for virtual reality applications. *International Journal of Human–Computer Interaction, 35*(2), 168-179.

Tai, S.H.C., and Fung, A.M.C. (1997). Application of an environmental psychology model in-store buying behaviour. *The International Review of Retail, Distribution and Consumer Research, 7*(4), 311-337. https://doi.org/10.1080/095939697342914

Tajudeen, F.O., Jaafar, N.I., and Ainin, S. (2018). Understanding the impact of social media usage among organizations. *Information and Management, 55*(3), 308-321.

Tanja, A., Vladimir, M., Nemanja, D., and Tamara, J. (2010). Integrated Model of Destination Competitiveness. *Geographica Pannonica, 15*(2), 58-69.

Tashakkori, A., and Teddlie, C. (2003). *Handbook of mixed methods in social and behavioural research.* Thousand Oaks, CA: Sage.

Tashakkori, A., and Teddlie, C. (2010). *Handbook of mixed methods in social and behavioural research* (2nd ed.). Thousand Oaks, CA: Sage.

Tatanatewin, W., and Inkarojrit, V. (2016). Effects of colour and lighting on retail impression and identity. *Journal of Environmental Psychology, 46,* 197-205. https://doi.org/10.1016/j.jenvp.2016.04.015

Taylor, S., and Todd, P.A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6,* 144-176.

Teller, C. (2008). Shopping streets versus shopping malls – determinants of agglomeration format attractiveness from the consumers' point of view. *International Review of Retail, Distribution and Consumer Research, 18*(4), 381-403.

Teller, C., and Reutterer, T. (2008). The evolving concept of retail attractiveness: What makes retail agglomerations attractive when customers shop at them? *Journal of Retailing and Consumer Services, 15*(3), 127-143.

Teller, C., and Elms, J.R. (2010). Managing the attractiveness of evolved and created retail agglomeration formats. *Marketing Intelligence and Planning, 28*(1)*,* 25-45. https://doi.org/10.1108/02634501011014598

Teller, C., and Elms, J.R. (2012). Urban place marketing and retail agglomeration customers. *Journal of Marketing Management, 28*(5-6), 546-567. https://doi.org/10.1080/0267257X.2010.517710

Thabane, L., Ma, J., Cheng, J., Ismaila, A., Rios, L.P., Robson, R., Thabane, M., Giangregorio, L., and Goldsmith, C.H. (2010). A tutorial on pilot studies: The what, why and how. *BMC Medical Research Methodology, 10*(1), 1-10.

Thrift, N. (2004). Intensities of feeling. *Geografiska Annaler, 86B*, 57-72.

Thomas, C., Bromley, R., and Tallon, A. (2006). New 'high streets' in the suburbs? The growing competitive impact of evolving retail parks. *International Review of Retail, Distribution and Consumer Research, 16*(1), 43-68.

Thomas, W. A., and Carey, S. (2005). Actual/virtual visits: What are the links?. *International Conference on Museums and the Web 2005, Vancouver, British Columbia, Canada.* Retrieved from http://www.archimuse.com/mw2005/papers/thomas/thomas.html

Thompson, R. L., and Higgins, C. A. (1991). Personal Computing: Toward a Conceptual Model of Utilization. *MIS quarterly, 15*(1), 125.

Thompson, R.L., Higgins, C.A., and Howell, J.M. (1991). Personal computing: Toward a conceptual model of utilisation. *MIS Quarterly,* 125-143.

Timothy, D. J. (2005). *Shopping Tourism, Retailing, and Leisure.* Clevedon, UK: Channel View Publications.

Tooke, N., and Baker, M. (1996). Seeing is believing: the effect of film on visitor numbers to screened locations. *Tourism Management, 17*(2), 87–94.

tom Dieck, M.C., and Jung, T. (2016). Value of augmented reality to enhance the visitor experience: A case study of Manchester Jewish Museum. *e-Review of Tourism Research,* 7*.*

tom Dieck , M. C., Jung, T., and tom Dieck, D. (2016). Enhancing art gallery visitors' learning experience using wearable augmented reality: generic learning outcomes perspective. *Current Issues in Tourism,* 21(17), 1-21. https://doi.org/10.1080/13683500.2016.1224818

tom Dieck, M.C., and Jung, T. (2017). Value of augmented reality at cultural heritage sites: A stakeholder approach. *Journal of Destination Marketing and Management, 6*(2), 110-117. https://doi.org/10.1016/j.jdmm.2017.03.002

tom Dieck, D., tom Dieck, M.C., Jung, T., and Moorhouse, N. (2018). Tourists' virtual reality adoption: An exploratory study from Lake District National Park. *Leisure Studies, 37*(4), 371-383. https://doi.org/10.1080/02614367.2018.1466905

Tombs, A., and McColl-Kennedy, J. R. (2003). Social-servicescape conceptual model. *Marketing Theory, 3*(4), 447-475. https://doi.org/10.1177%2F1470593103040785

Tomono, A., Kanda, K., and Otake, S. (2011). Effect of smell presentation on individuals with regard to eye catching and memory. *Electronics and Communications in Japan, 94*(3).

Tornatzky, L., and Fleischer, M. (1990). *The process of technology innovation.* Lexington. MA: Lexington Books.

Torres, B.L. (2015). Destination marketing organisations' stakeholders and best practices. *General Human Environmental Sciences, 9,* 1-53. http://scholarworks.uark.edu/ghesuht/9

Tourism Alliance. (2016). UK Tourism Statistics. *Tourism Alliance.* Retrieved from http://www.tourismalliance.com/downloads/TA_390_415.pdf

Tourism Society. (2018). Tourism Definitions. *The Tourism Society.* Retrieved from http://www.tourismsociety.org/page/88/tourism-definitions.htm

Tracy, S.J. (2013). *Qualitative research methods: Collecting evidence, crafting analysis, communicating impact.* Wiley-Blackwell: Chichester, UK.

Trueman, M., Cook, D., and Cornelius, N. (2008). Creative dimensions for branding and regeneration: Overcoming negative perceptions of a city. *Place Branding and Public Diplomacy, 4(*1), 29-44.

Trunfio, M., and Campana, S. (2019). A visitors' experience model for mixed reality in the museum. *Current Issues in Tourism.* https://doi-org.mmu.idm.oclc.org/10.1080/13683500.2019.1586847

Tsai, S.P. (2011). Place attachment and tourism marketing: Investigating international tourists in Singapore. *International Journal of Tourism Research, 14*(2). https://doi.org/10.1002/jtr.842

Tuan, Y.F. (1974). *Topophilia: A study of environmental perception, attitudes and values*. Englewood Cliffs, NJ: Prentice Hall.

Tuckett, A. G. (2005). Applying thematic analysis theory to practice: A researcher's experience. *Contemporary Nurse, 19*(1-2), 75-87.

Turley, L. W., and Milliman, R. E. (2000). Atmospheric effects on shopping behaviour: A review of the experimental evidence. *Journal of Business Research, 49*(2), 193-211.

Tussyadiah, I., Wang, D., Jung, T.H., and tom Dieck, M.C. (2018). Virtual Reality, Presence, and Attitude Change: Empirical Evidence from Tourism. *Tourism Management, 66,* 140-154. https://doi.org/10.1016/j.tourman.2017.12.003

Tussyadiah, I., Wang, D., and Jia, C. (2017). Virtual reality and attitudes toward tourism destinations. In R. Schegg. and B. Stangl (Eds.), *Information and Communication Technologies in Tourism 2017. Proceedings of the International Conference in Rome, Italy, January 24-26, 2017* (pp. 229-239). Cham, Switzerland: Springer International Publishing. https://doi.org/10.1007/978-3-319-51168-9_17

Tussyadiah, I., Wang, D., and Jia, C. (2016). Exploring the persuasive power of virtual reality imagery for destination marketing. *Tourism Travel and Research Association: Advancing Tourism Research Globally, 25,* 1-7. https://scholarworks.umass.edu/ttra/2016/Academic_Papers_Oral/25

Tussyadiah, I., Wang, D., and Jia, C. (2016). Exploring the persuasive power of virtual reality imagery for destination marketing. *Tourism Travel and Research Association: Advancing Tourism Research Globally, 25.*

Tussyadiah, T. (2014). Expectation of travel experiences with wearable computing devices. In Z. Xiang. and I. Tussyadiah (Eds.), *Information and Communication Technologies in Tourism 2014: Proceedings of the International Conference in Dublin, Ireland, January 21-24, 2014* (pp. 539-552). Cham, Switzerland: Springer International Publishing.

Tussyadiah, I. P., and Fesenmaier, D. R. (2009). Mediating tourist experiences: Access to places via shared videos. *Annals of Tourism Research, 36*(1), 24-40.

Tutenges, S. (2012). Nightlife tourism: A mixed methods study of young tourists at an international nightlife resort. *Tourist Studies, 12*(2), 131-150. https://doi.org/10.1177%2F1468797612454250

Tuzin, D. (2006). Base Notes: Odour, breath and moral contagion in Ilahita. In J. Drobnick (Ed.), *The Culture Reader* (pp. 59-67). Oxford: Berg.

Ukpabi, D., and Karkaluoto, H. (2017). Consumers' acceptance of information and communication technology in tourism: A review. Telematics and Informatics, 34(5), 618-644. https://doi.org/10.1016/j.tele.2016.12.002

UNWTO. (2014). Global benchmarking for city tourism measurement. Madrid: AM Reports: Volume Ten. *UNWTO World Tourism Organisation.* Retrieved from http://www.e-unwto.org/doi/pdf/10.18111/9789284416691

UNWTO. (2018). Urban Tourism. *UNWTO World Tourism Organisation.* Retrieved from http://marketintelligence.unwto.org/content/urban-tourism

UNWTO. (2017). *Why Tourism? UNWTO World Tourism Organisation.* Retrieved from http://www2.unwto.org/content/why-tourism

UNWTO Statistics Guidelines. (2010). Tourism Definitions. *The Tourism Society.* Retrieved from http://www.tourismsociety.org/page/88/tourism-definitions.htm

Urry, J. (1999). Sensing the city. In R. Judd, and S. S. Fainstein, *The Tourist City* (pp. 71-88). New Haven: Yale University Press.

Valerio, M. A., and Mainieri, T. (2008). Survey Ethics. In P. J. Lavrakas, (Ed.), *Ethical Principles* (pp. 244-246). SAGE Research Methods. https://dx.doi.org/10.4135/9781412963947.n565

Vance, A., Elie-Dit-Cosaqute, C., and Straub, D.W. (2008). Examining trust in information technology artefacts: The effects of system quality and culture. *Journal of Management Information Systems, 24*(4), 73-100. https://doi.org/10.2753/MIS0742-1222240403

Van den berg, L., and Braun, E. (1999). Urban competitiveness, marketing and the need for organising capacity. *Urban Studies, 36*(5-6), 987-999.

Van Den Berg, L., Ven Der Borg, J., and Van Der Meer, J. (1995). *Urban Tourism - Performance and Strategies in Eight European Cities.* UK: Ashgate.

Van Esch, P., Arli, D., Gheshlagli, M.H., Andonopoulos, V., van der Heidt, T., and Northey, G. (2019). Anthropomorphism and augmented reality in the retail environment. *Journal of Retailing and Consumer Services, 49(C),* 35-42. https://dx.doi.org/10.1016/j.jretconser.2019.03.002

Van Herpen, E., van den Broeck, E., van Trijp, H.C.M., and Yu, T. (2016). Can a virtual supermarket bring realism into the lab? Comparing shopping behaviour using virtual and pictorial store representations to behaviour in a physical store. *Appetite, 107,* 196-207.

Van Kerrebroeck, H., Brengman, M., and Willems, K. (2017a). When brands come to life: Experimental research on the vividness effect of virtual reality in transformational marketing communications. *Virtual Reality, 21*(4), 177-191.

Van Kerrebroeck, H., Brengman, M., and Willems, K. (2017b). Escaping the crowd: An experimental study on the impact of a virtual reality experience in a shopping mall. *Computers in Human Behaviour, 77*, 437-450.

van Teijlingen, E., and Hundley, V. (2001). The importance of pilot studies. *Social Research Update*, (35).

Veal, A.J. (2006). *Research Methods for Leisure and Tourism* (3rd ed.). London: Prentice Hall.

Venkatesh, V., and Davis, F.D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences, 27*(3), 451-481.

Venkatesh, V., Morris, M.G., Davis, F.D., and Davis, G.B. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Venkatesh, V., and Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Science, 39*(2), 273-312.

Venkatesh, V., and Davis, F. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204.

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Verhagen, T., Vonkeman, C., and van Dolen, W. (2016). Making Online Products More Tangible: The Effect of Product Presentation Formats on Product Evaluations. *CyberPsychology, Behaviour, and Social Networking, 19*(7), 460-464. https://doi.org/10.1089/cyber.2015.0520

Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., and Schlesinger, L. A. (2009). Customer experience creation: Determinants, dynamics and management strategies. *Journal of Retailing, 85*(1), 31-41.

Vince, J. (2004). *Introduction to virtual reality.* London, UK: Springer-Verlag.

Visit Britain. (2017). Inbound shopping research. *Visit Britain.* Retrieved from https://www.visitbritain.org/shopping

Visit Britain. (2017). Britain's Visitor Economy Facts. *Visit Britain.* Retrieved from https://www.visitbritain.org/visitor-economy-facts

Visit Britain. (2014). Inbound shopping research. *Visit Britain.* Retrieved from https://www.visitbritain.org/shopping

Visit Britain. (2013). Inbound tourism to Britain's nations and regions: Profile and activities of international holiday visitors. *Visit Britain.* Retrieved from https://www.visitbritain.org/sites/default/files/vb-corporate/Documents-Library/documents/Regional_Activities_report_FINAL_COMPRESSED.pdf

Volgger M., and Pechlaner H. (2014). Requirements for Destination Management Organizations in Destination Governance: Understanding DMO Success. *Tourism Management, 41*(1): 64–75.

Vonkeman, C., Verhagen, T., and van Dolen, W. (2017). Role of local presence in online impulse buying*. Information and Management, 54*(8)*,* 1038-1048.

Vorländer, M. (2008). Auralization: Fundamental of Acoustics. *Modelling, simulation, algorithms and acoustic virtual reality.* Berlin: Springer.

Vrechopoulos, A., Apostolou, K., and Koutsiouris, V. (2009). Virtual reality retailing on the web: Emerging consumer behavioural patterns. *The International Review of Retail. Distribution and Consumer Research, 19*(5), 469-482.

Votsi, N.P., Mazaris, A.D., Kallimanis, A.S., and Pantis, J.D. (2014). Natural quiet: An additional feature reflecting green tourism development in conservation areas of Greece. *Tourism Management Perspectives, 11,* 10-17.

Urbach, N., and Ahlemann, F. (2010). Structural Equation Modelling in Information Systems Research Using Partial Least Squares. *Journal of Information Technology Theory and Application (JITTA), 11*(1). Retrieved from https://aisel.aisnet.org/jitta/vol11/iss2/2

Wakefield, K. L., and Blodgett, J. (1994). The importance of servicescapes in leisure service settings. *Journal of Services Marketing, 8*(3), 66-76.

Wakefield, K.L., and Blodgett, J.G. (1996). The effect of the servicescape on customers' behavioural intentions in leisure service settings. *Journal of Services Marketing,* (6), 45-61.

Wakefield, K. L., and Blodgett, J. (2016). Retrospective: the importance of Servicescapes in leisure service settings. *Journal of Services Marketing, 30*(7), 686-691.

Walls, A.R., and Wang, Y. (2011). Experiential Consumption and Destination Marketing. In Wang, Y., and Pizam, A. (Eds.). (2011). *Destination Marketing and Management: Theories and Applications* (pp.82-98). Oxfordshire, UK: CAB International, Elsevier.

Wan, C.S., Tsaur, S.H., Chiu, Y.L., and Chiou, W.B. (2007). Is the advertising effect of virtual experience always better or contingent on different travel destinations? *Information Technology and Tourism, 9*(1), 45-54.

Wang, Y.J., Minor, M.S., and Wei, J. (2011). Aesthetics and the online shopping environment: Understanding consumer responses. *Journal of Retailing, 87*(1), 46-58.

Wang, Y., and Pizam, A. (2011). *Destination Marketing and Management: Theories and Applications*. Oxfordshire, UK: CAB International, Elsevier.

Wang, Y. J., Hernandez, M. D., and Minor, M. S. (2010). Web aesthetics effects on perceived online service quality and satisfaction in an e-tail environment: The moderating role of purchase task. *Journal of Business Research, 63*(9), 935–942.

Ward, S.V. (1998). *Selling place: The marketing and promotion of towns and cities (1850-2000).* London: E and FN Spon.

Warnaby, G., and Davies, B. (1997). Commentary: Cities as service factories? Using the servuction system for marketing cities as shopping destinations. *International Journal of Retail and Distribution Management, 25*(6), 204-210.

Warnaby, G., Bennison, D., Davies, B. J., and Hughes, H. (2002). Marketing UK towns and cities as shopping destinations. *Journal of Marketing Management, 9-10*, 877-904.

Warnaby, G., and Medway, D. (2004). The role of place marketing as a competitive response by town centres to out-of-town retail developments. *The International Review of Retail Distribution and Consumer Research, 14*(4), 457-477. https://dx.doi.org/10.1080/0959396042000260898

Warnaby, G., Bennison, D., Davies, B., and Hughes, H.L. (2003). How important is retail in the marketing of towns and cities? Public sector perspectives. *OAI.*

Warnaby, G., Bennison, D., and Medway, D. (2006). The role of SME retailers in locational differentiation. In *Proceedings of the CIRM Conference – Destinations*

and Locations: Exploring the Multiple Identities of Place (pp. 167-173), Manchester: Manchester Metropolitan University.

Warnaby, G., and Medway, D. (2006). BIDding goodbye to TCM? Marketing implications of changing urban management structures. *Paper presented at Academy of Marketing Conference,* London.

Washburn, M., Bordnick, P., and Rizzo, A. (2016). A pilot feasibility study of virtual patient simulation to enhance social work students' brief mental health assessment skills. *Social Work in Health Care, 55*(9), 675–693. https://dx.doi.org/10.1080/00981389.2016.1210715

Washburn, D.A., and Jones, L.M. (2004). Could olfactory displays improve data visualisation? *Computing in Science and Engineering, 6*(6), 80-83.

Wan, C., Tsaur, S., Chiu, Y., and Chiou, W. (2007). Is the advertising effect of virtual experience better or contingent on different travel destinations? *Information Technology and Tourism, 9*(1), 45-54.

Wang, Y.S., Li, H.T., Li, C.R., and Zhang, D.Z. (2016). Factors affecting hotels' adoption of mobile reservation systems: A technology-organisation-environment framework. *Tourism Management, 53,* 163-172.

Webster, C., Ivanov, S., and Illum, S.F. (2009). NTOs and state policy: The paradigms of political economy and institutional response to tourism in times of economic crisis. *Paper presented at the International Conference on Tourism Development and Management.* Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1595331

Wells, I. (1991). *Town centre management: A future for the high street?* Reading: University of Reading.

Weltevreden, J., and Rietbergen, T.V. (2007). E-shopping versus city centre shopping: The role of perceived city centre attractiveness. *Tijdschrift voor Economische en Sociale Geografie, 98*(1), 68-85. https://dx.doi.org/10.1111/j.1467-9663.2007.00377.x

White, C., and Scandale, S. (2005). The role of emotions in destination visitation intentions. *Journal of Hospitality and Tourism Management, 12*(2), 168-178.

Whyatt, G. (2004) Town centre management: how theory informs a strategic approach, *International Journal of Retail and Distribution Management, 32*(7), 346–353.

Wiles, R., and Boddy, J. (2013). Introduction to the special issue: Research ethics in challenging contexts. *Methodological Innovations, 8*(2), 1-5. https://doi.org/10.4256%2Fmio.2013.009

Williams, P., and Hobson, J.S.P. (1995). Virtual reality and tourism: fact or fantasy? *Tourism Management, 16*(6), 423-427.

Williams, D. (2019). John Lewis & Partners to trial virtual reality retail experience. *Retail Insight Network.* Retrieved from https://www.retail-insight-network.com/news/john-lewis-virtual-reality-retail-experience/

Williams, C. (2012). Re-theorising the role of retail shopping centres as tourist attractions in economic development. In C. McIntyre (Ed.), *Tourism and Retail: The Psychogeography of Liminal Consumption* (pp. 11-27). London: Routledge.

Wilson, V. (2013). Research methods: *Mixed methods research, 8*(2), EBL 101. https://doi.org/10.18438/B8801M

Wong, K.K.K. (2013). Partial least squares structural equation modelling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin,* 24(Technical Note 1), 1-32.

Wu, W.Y., Lee, C.L., Fu, C.S., and Wang, H.C. (2013). How can online store layout design and atmosphere influence consumer shopping intention on a website? *International Journal of Retail and Distribution Management, 42*(1), 4-24.

Wu, Y.L., and Li, E. (2018). Marketing mix, customer value, and customer loyalty in social commerce: A Stimulus-Organism-Response perspective. *Internet Research, 28*(1), 74-104. https://doi.org/10.1108/IntR-08-2016-0250

Wyckoff, M.A., Neumann, C., Pape, G., and Schindler, K. (2015). *Placemaking as an economic development tool: A placemaking guide.* East Lansing, MI: Land Policy Institute, Michigan State University.

Xu, J.B. (2010). Perceptions of tourism products. *Tourism Management, 31,* 607-610.

Xu, Z., and Zhang, J. (2016). Antecedents and consequences of place attachment: A comparison of Chinese and Western urban tourists in Hangzhou, China. *Journal of Destination Marketing and Management, 5*(2), 86-96.

Yan, R., and Eckman, M. (2009). Are lifestyle centres unique? Consumers' perceptions across locations. *International Journal of Retail and Distribution Management, 37*(1), 24-42. https://doi.org/10.1108/09590550910927144

Yen, C., and Lu, H. (2008). Effects of e-service quality on loyalty intention: An empirical study in online auction. *Managing Service Quality: An International Journal, 18*(2), 127-146.

Yim, M.Y.C., and Park, S.Y. (2019). "I am not satisfied with my body, so I like augmented reality (AR)" Consumer responses to AR-based product presentations. *Journal of Business Research, 100,* 581-589.

Yim, M.Y.C., Chu, S.C., and Sauer, P.L. (2017). Is augmented reality technology an effective tool for e-commerce? An interactivity and vividness perspective*. Journal of Interactive Marketing, 39,* 89-103.

Yim, M.Y., and Chu, S.C. (2013). Extending the electronic technology acceptance model: The case of augmented reality-based advertising. *Paper presented at the Annual Conference of the American Academy of Advertising. In Proceedings of the Conference - American Academy of Advertising* (pp. 21)*,* Albuquerque, NM.

Retrieved from https://www.tib.eu/en/search/id/BLCP%3ACN085305345/Extending-the-Technology-Acceptance-Model-The-Case/

Yin, R. (1994). *Case Study Research: Design and Methods* (Vol. 5) (2 ed.). London: SAGE Publications.

Yoo, B., and Donthu, N. (2001). Developing a scale to measure the perceived quality of internet shopping sites (SITEQUAL). *Quarterly Journal of Electronic Commerce, 2(*1), 31-47.

Yoo, J., and Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. *Journal of Business Research, 67*(11)*,* 2464-2472.

Yoon, C. C. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment. *International Journal of Management and Information Systems, 19*(1), 21-36.

Yovcheva, Z., Buhalis, D., Gatzidis, C., and van Elzakker, C.P. (2014). Empirical evaluation of smartphone augmented reality browsers in an urban tourism destination context. *International Journal of Mobile Human Computer Interaction, 6*(2), 10-31.

Yuan, Y.H., and Wu, C. (2008). Relationships among experiential marketing, experiential value and customer satisfaction. *Journal of Hospitality and Tourism Research, 32*(3), 387-410. https://doi.org/10.1177/1096348008317392

Yüksel, A. (2007). Tourist shopping habitat: Effects on emotions, shopping value and behaviours. *Tourism Management, 28*(1), 58-69.

Yüksel, A., and Yüksel, F. (2003). Measurement of tourist satisfaction with restaurant services: A segment-based approach. *Journal of Vacation Marketing, 1,* 52-68. https://doi.org/10.1177%2F135676670200900104

Zaichkowsky, J. (1987). The emotional aspect of product involvement. *Advances in Consumer Research, 14*, 32-35.

Zajonc, R.B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35*(2), 151-175. https://psycnet.apa.org/doi/10.1037/0003-066X.35.2.151

Zamanzadeh, V., Jasemi, M., Valizadeh, L., Keogh, B., and Taleghani, F. (2015). Effective factors in providing holistic care: A qualitative study. *Indian Journal of Palliative Care, 21*(2), 214-224.

Zamfir, M., Manea, M.D., and Ionescu, L. (2016). Return on investment – Indicator for measuring the profitability of invested capital. *Valahian Journal of Economic Studies, 7*(21), 79-86.

Zavattaro, S.M., Daspit, J.J., and Adams, F.G. (2015). Assessing managerial methods for evaluating place brand equity: A qualitative investigation. *Tourism Management, 47*(C)*, 11*-21. https://doi.org/10.1016/j.tourman.2014.08.018

Zenker, S., Braun, E., and Petersen, S. (2017). Branding the destination versus the place: The effects of brand complexity and identification for residents and visitors. *Tourism Management, 58*, 15-27.

Zenker, S., and Martin, S. (2011). Evaluating success in place marketing and branding. *Place Branding and Public Diplomacy, 7*(1), 32-41.

Zentner, M., Grandjean, D., and Scherer, K.R. (2008). Emotions evoked by the sound of music: Characterisation, classification, and measurement. *Emotion, 8*(4), 494-521.

Zhang, L., Zhu, J., and Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in Human Behaviour, 28*(5), 1902-1911. https://dx.doi.org/https://doi.org/10.1016/j.chb.2012.05.008

Zhou, L., and Wang, T. (2014). Social media: A new vehicle for city marketing in China. *Cities, 37*, 27-32.

Zybura, M., and Eskeland, G. (1999). Olfaction for virtual reality. *Quarter Project, Industrial Engineering,* 543.

Appendices

12.1 Appendix A. Several Retail and Tourism E-commerce Studies employing S-O-R Theory

Table 12.1 Several Retail and Tourism related E-commerce Studies using S-O-R Theory

Authors	Stimulus	Moderator	Organism	Response	Context
Krasonikolakis et al., (2018)	Layout design 1 Layout design 2 Layout design 3	Presence	Online shopping enjoyment Entertainment Ease of navigation Online customer experience	Online purchase intentions Word-of-mouth intentions	The effects of store layout on consumer behaviour in 3D online stores
Prashar, Vijay, and Parsad (2017)	Online shopping values: hedonic shopping value and utilitarian shopping value Web atmospheric cues: web informativeness, web entertainment, and effectiveness of information content	N/A Control variables (gender and income)	Web satisfaction	Purchase intention	Effects of online shopping values and website cues on purchase behaviour
Ali (2016)	Hotel website usability Hotel website functionality Hotel website security and privacy	Hotel website quality	Perceived flow	Customer satisfaction Purchase intention	Examines the relationships between hotel website quality, perceived flow, customer satisfaction, and purchase intentions
Gao and Bai (2014)	Website atmospheric cues: Informativeness Effectiveness Entertainment	N/A (control variables: age, gender, perceived internet expertise)	Cognitive state: flow	Behavioural outcomes: Purchase intention Satisfaction	Impact of website atmospheric cues on the development of flow and its subsequent outcomes in the context of online tourism
Wu et al., (2013)	Store layout design Atmosphere	N/A	Emotional arousal Attitude toward the website	Purchase intention	Influence of layout design and atmosphere on consumers' shopping intention on website

Floh and Mandleberger (2013)	Atmospheric cues (e-store content, e-store design, and e-store navigation)	Shopping enjoyment	Impulsiveness Browsing	Impulsive buying behaviour > *Impulse buying expenditure*	Extends S-O-R with impulse buying behaviour in online shopping context
Rose et al., (2012)	CES antecedents: Interactive speed, telepresence, challenge, skill. AES antecedents: Aesthetics and perceived benefits and; ease-of-use, customization, connectedness (when mediated by perceived control)	N/A	Cognitive experiential state (CES) Affective experiential state (AES)	Online shopping satisfaction Trust in online shopping > *repurchase intention*	Explores the relationship between antecedents and outcomes of online customer experience within online shopping websites
Wang et al., (2011)	Perceived web aesthetics: Aesthetic formality Aesthetic appeal	Purchase task	Affective: satisfaction and arousal Cognitive: online service quality	Conative: Purchase Consultation Search on other websites Re-visit	Consumer response to web aesthetics

(Source: Authors own)

12.2 Appendix B. M-commerce Studies employing S-O-R Theory

Table 12.2 M-commerce Studies employing S-O-R Theory

Author(s)	Stimulus	Moderator	Organism	Response	Context
Lee (2018)	Functionality Aesthetics Symbolism	Autonomy Relatedness	Engagement behaviours	Brand loyalty	Hotel mobile application
Huang (2017)	Web atmospherics: Informativeness Navigational cues Perceived organisation Entertainment Mobile characteristics: Ubiquity Convenience Localisation Personalisation	N/A	Pleasure Arousal Dominance	Usage: Browsing Urge to buy	Urge to buy in m-commerce
Bhandari et al., (2017)	UI design factors: Balance Originality	N/A	Emotions: Valence Arousal	Quality perception: Pragmatic Hedonic	Mobile application user experience
Kim and Hahn (2012)	High-tech involvement Experiment proclivity Fashion/brand leadership	N/A	Perceived usefulness Perceived ease of use Perceived enjoyment	Attitude toward using mobile devices for communication Attitude toward using mobile devices for commerce	Mobile communication and commerce (Generation Y consumers)
Li, Dong, and Chen (2012)	Convenience Media richness Subjective norms Self-efficacy	N/A	Emotion	Consumption experience	M-commerce consumption experience

(Source: Authors own)

12.3 Appendix C. Commonalities and Differences between Industry and Visitor Interviews

Table 12.3. Commonalities and Differences between Industry and Visitor Interviews

	Industry Interviews	Visitor Interviews
Commonalities		
Perceived benefits of VR	VR could positively influence visitor perceptions in terms of destination image (e.g. viewing as more innovative as a result of VR implementation).	VR could influence attitude change and visitor perceptions in terms of destination image.
	VR could be useful to attract global markets and provide them with insights into the destination's offerings prior to arrival.	VR could be useful for previewing destinations that are a prolonged distance and culturally different to the visitor's home country.
	Indicated that VR could facilitate a seamless booking procedure during the pre-visit phase and enable potential visitors to make more informed purchasing decisions.	Indicated that using VR could motivate immediate purchase of trips. Additionally, several visitors expressed interest in purchasing in VR.
	VR could facilitate positive WOM including via social media.	Indicated intent to recommend VR retail applications to friends and family.
Perceived barriers of VR	Visitor readiness referred to visitor's willingness to adopt VR.	Visitors highlighted how perceived barriers could be associated with visitor's readiness to accept and utilise VR.
	Technology access implied that further VR developments will make the technology more attractive to both visitors and industry marketers.	Visitors highlighted how the technology is in the early stages and further development could encourage visitor adoption.
Visitor acceptance of VR	The usability of VR was perceived as a barrier to visitor adoption as they may not be accustomed to wearing HMDs.	General acceptance of VR may be limited due to accessibility of VR hardware and software and perceived usefulness.
Usability of VR	Ensuring VR is easy to use was considered key to encourage adoption or both visitors and organisations.	Visitors were concerned with the usability of VR and highlighted the importance of ease of use and quality graphics to increase user experience and enhance presence.
Costs associated with VR	Costs associated with VR in terms of implementing into the organisation and visitor accessibility were considered potential barriers to VR.	Perceived high costs associated with advanced VR hardware that could facilitate interactivity could be a potential barrier to widespread consumer adoption.
VR content	Highlighted the importance of integrating unique content that portrays the destination in novel ways.	Highlighted the importance of content in terms of incorporating pleasing virtual aesthetics that portray the urban place in a positive way.
	VR could be useful for tourism marketers given their role in pre-arrival phase in that they are able to encourage real-vitiation.	Indicated that VR could be useful for providing potential visitors with insights into the destination pre-arrival, which

		could facilitate decision-making and lead to positive behavioural intentions.
	However, content should remain limited to ensure an element of surprise upon actual visitation.	However, limited content including previewing highlights of the destination is sufficient enough to entice them to visit.
Differences		
Focus of interest re VR implementation	Concerned with organisational factors (e.g. organisational readiness, ROI, limited funding) rather than content, which could be because participants did not experience a VR application.	Focused more on multisensory experience (e.g. virtual atmospherics and virtual aesthetics) and virtual retail environment cues (e.g. interactivity, social presence, layout design and usability), likely due to the nature of the interview questions.
	Did not mention presence as did not experience a VR application, therefore, this concept was not explored.	Largely focused on the concept of presence and comparing the two VR applications in terms of this construct.
	Concerned with competitive pressures to implement innovative technologies.	Highlighted additional visitor focused behavioural intentions including intent to use VR applications again.

(Source: Authors own)

12.4 Appendix D. Technology Adoption Theories

Table 12.4 Description and Constructs: Reviewed Technology Adoption Theories

Theory	Author(s)	Description	Constructs	References
The Theory of Reasoned Action (TRA)	(Fishbein and Ajzen 1975; Ajzen and Fishbein, 1980)	Useful in explaining and predicting an individual's actual behaviour. Assumes that individuals would use technology if they see the benefits of using them.	*Attitudes, subjective norms, and behavioural intention.*	(Chuttur, 2009; Samaradiwakara and Gunawardena, 2014)
Theory of Planned Behaviour (TPB)	(Ajzen, 1985, 1990)	Informs the inadequacies found in the TRA, namely the over reliance of intentions on predicting behaviour.	Additional construct to TRA: *perceived behavioural control.*	(Beck and Ajzen, 1991)
Technology Acceptance Model (TAM)	(Davis, 1989)	Combines findings from the TRA and TPB. Key model in predicting behavioural intentions to accept or reject technology. Considers two distinct beliefs, perceived usefulness and perceived ease of use, in determining the individual's attitude toward using the technology.	*External variables, perceived usefulness, perceived ease of use, attitude towards using, behavioural intention to use, and actual system use.*	(Davis, 1989; Chuttur, 2009; Huang et al., 2009)
Technology Acceptance Model 2 (TAM 2)	(Venkatesh and Davis, 2000)	An extension of the TAM. Aims to identify variables that influence perceived usefulness.	Additional to TAM: *subjective norm, voluntariness and compliance, image, job relevance, output quality, and result demonstrability.*	(Marangunic and Granic, 2014; Sharma and Mishra, 2014)
Technology Acceptance Model 3 (TAM 3)	(Venkatesh and Bala, 2008)	Proposed extension of the TAM2 and the model of the determinants of perceived ease of use.	Additional to TAM2: Anchor: *computer self-efficacy, perceptions of external control, computer anxiety, computer playfulness.* Adjustment: *perceived enjoyment, and objective usability.*	(Venkatesh and Bala, 2008)
Combined TAM and TPB (C-TAM-TPB)	(Taylor and Todd, 1995)	Combined the key determinants of the TPB (influence of social and control factors) that are not used to measure the behaviour in the TAM.	*Subjective norm, and perceived behavioural control.*	(Taylor and Todd, 1995; Samaradiwakara and Gunawardena, 2014).

(Source: Authors own)

12.5 Appendix E. Ethics and Participant Consent Forms

12.5.1 Ethical Letter of Approval from Manchester Metropolitan University

04/05/2018

Project Title: Enhancing Visitors' Retail Experience through Immersive Technologies

EthOS Reference Number: 0334

Ethical Opinion

Dear Natasha Moorhouse,

The above application was reviewed by the Business and Law Research Ethics and Governance Committee and on the 04/05/2018, was given a favourable ethical opinion. The approval is in place until 31/08/2019 and is based on the documentation submitted with your application.

Conditions of favourable ethical opinion

The Business and Law Research Ethics and Governance Committee favourable ethical opinion is based on the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

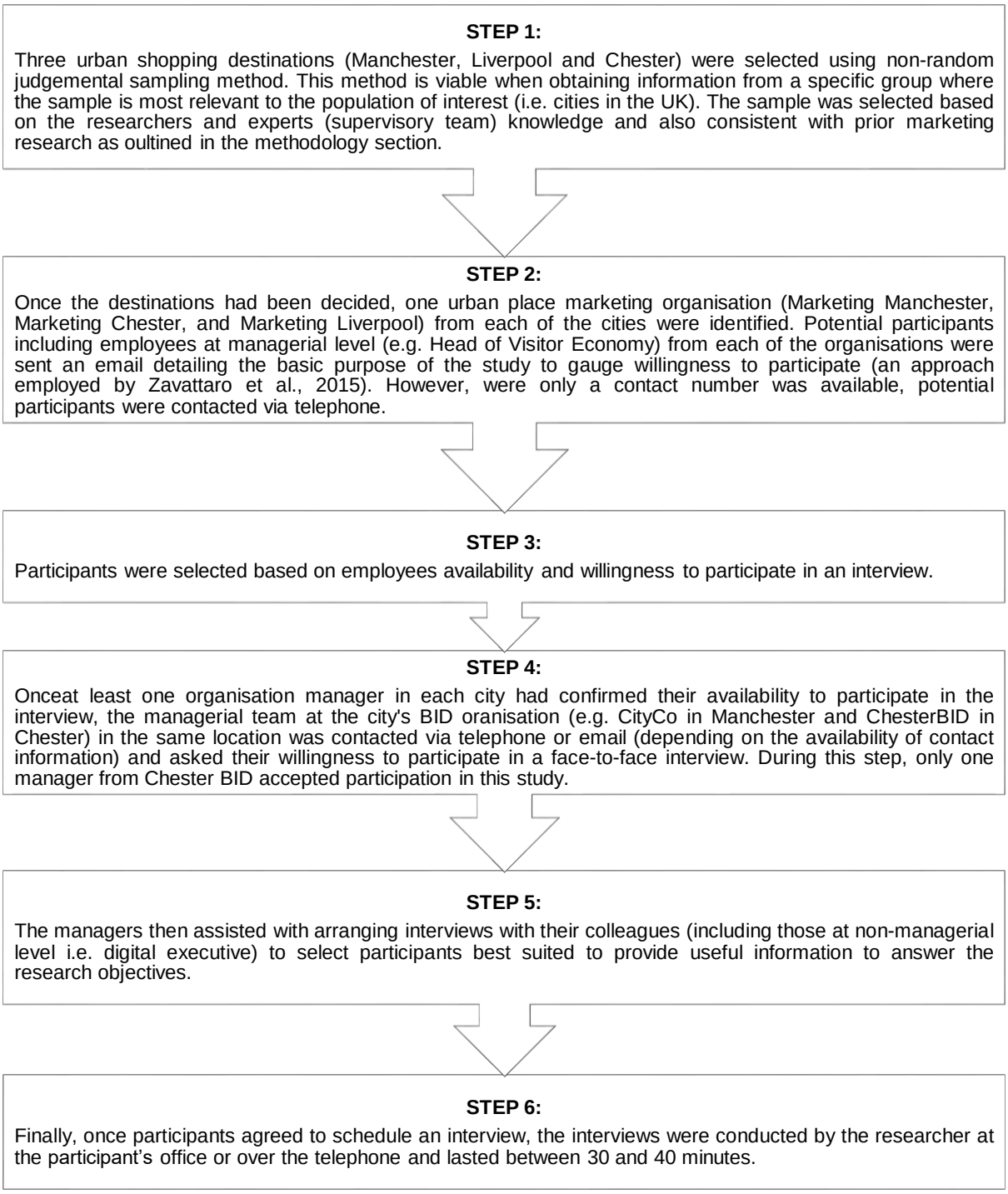
We wish you every success with your project.

Business and Law Research Ethics and Governance Committee

12.5.2 Industry Interviews

12.5.2.1 Participant Recruitment Process

Figure 12.1. Participant Recruitment Process



(Source: Authors own)

12.5.2.2 Participant Information Sheet

Natasha Moorhouse

PhD Student

Faculty of Business and Law

Business School

Manchester Metropolitan University

07522981917

31.07.2017

Participant Information Sheet for Research Interview

Project title: Enhancing tourists shopping experience through immersive technologies.

I would like to invite you to take part in a research study based on using immersive technologies for destination marketing purposes and to enhance the tourist's shopping experience in urban shopping destinations. Please take the time to read the following information carefully and decide whether you would like to proceed with your involvement in the study. Do not hesitate to ask any questions if you require further information.

Purpose of this pilot study

The purpose of this pilot study is to gain an insight from destination marketers of urban shopping destinations and explore their perceived potential of AR and VR for destination marketing purposes and to enhance the tourists shopping experience. The findings will contribute to the researchers PhD study. You have been invited to take part in this study as you are a suitable candidate to provide insights into the usefulness of immersive technologies for shopping tourism purposes. You are not obliged to take part; however, your contribution is highly valued by the researcher.

Any information collected from you is strictly confidential and will go no further than this study, and you will remain anonymous throughout the entire process.

The interview will last approximately 30 minutes. You will only need to meet with the researcher once.

What will I have to do?

The interview will consist of an informal one-to-one discussion between you and the researcher on the topic of this research.

What will happen with the research results?

By taking part, you agree for the interview to be recorded on an audio device for the use of this research only. The data will be transcribed and stored on the researcher's password-protected computer known only by the researcher, and securely disposed of following completion of the researcher's 3-year PhD programme.

You are welcome to withdraw from the study at any given point without reason, and no further questions will be asked. Should you wish to withdraw, then any previous information collected from you will be disposed of immediately and will not be used.

The results of this study will be used towards the researchers PhD only, and will not be published in any report or publication unless consent to do so is approved by each participant. In this instance, any information provided by you will remain anonymous.

Addressing any concerns you may have

If you have any concerns about any aspects of this study, you should speak to the researcher directly during the interview or contact the researcher on the email provided below.

Should you wish to take the enquiry further, you are advised to contact the researcher's supervisor in the first instance on the following email:

Dr. Timothy Jung

T.jung@mmu.ac.uk

Alternatively, you may wish to take your concern direct to the university, and are advised to follow the University Complaints Procedure that can be found at the following address:

http://www.mmu.ac.uk/academic/casqe/regulations/complaints.php

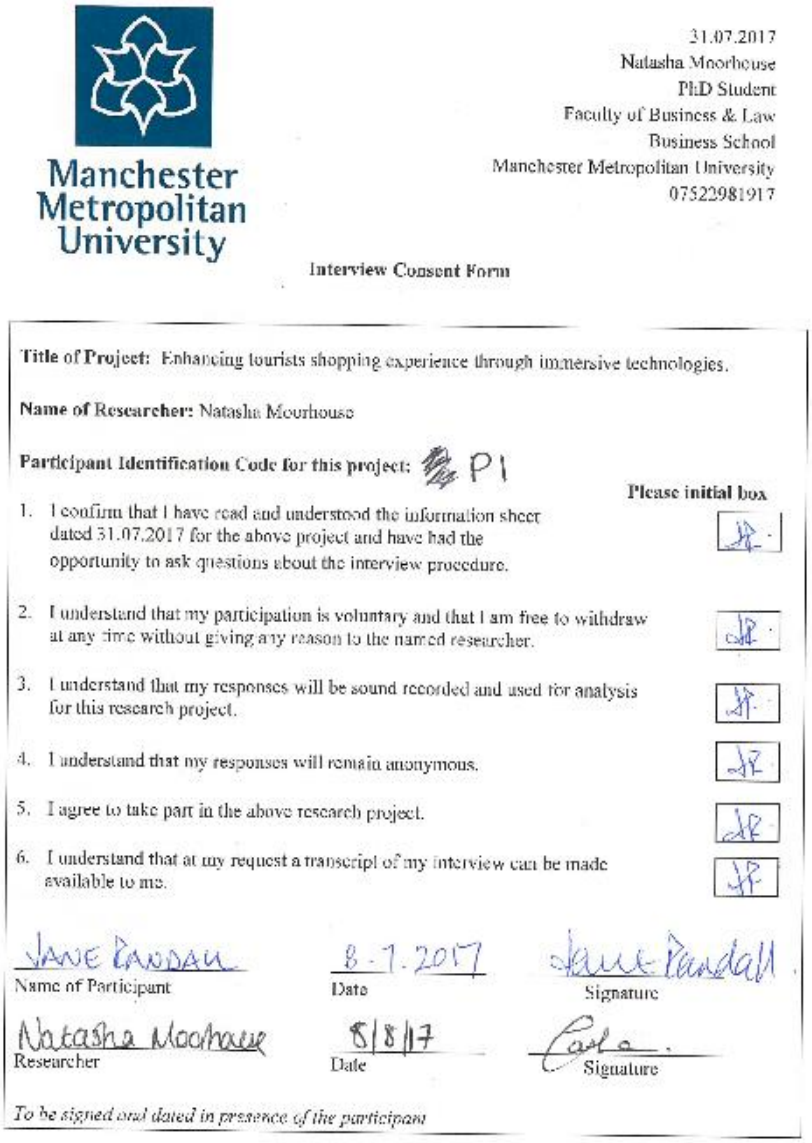
Further information and contact details:

The research is funded by the Manchester Metropolitan University, All Saints Campus, Oxford Road, M15 4BH.

If you require any further information, please do not hesitate to contact the researcher directly on the email below:

natasha.moorhouse@stu.mmu.ac.uk

12.5.2.3 Signed Participant Consent Forms



Manchester Metropolitan University

31.07.2017
Natasha Moorhouse
PhD Student
Faculty of Business & Law
Business School
Manchester Metropolitan University
07522981917

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project: P1

	Please initial box
1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure.	JR
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	JR
3. I understand that my responses will be sound recorded and used for analysis for this research project.	JR
4. I understand that my responses will remain anonymous.	JR
5. I agree to take part in the above research project.	JR
6. I understand that at my request a transcript of my interview can be made available to me.	JR

JANE RANDALL Name of Participant	8.7.2017 Date	Jane Randall Signature
Natasha Moorhouse Researcher	8/8/17 Date	Signature

To be signed and dated in presence of the participant

Manchester Metropolitan University

31.07.2017
Natasha Moorhouse
PhD Student
Faculty of Business & Law
Business School
Manchester Metropolitan University
07522981917

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project: P2

	Please initial box
1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure.	✓
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	✓
3. I understand that my responses will be sound recorded and used for analysis for this research project.	✓
4. I understand that my responses will remain anonymous.	✓
5. I agree to take part in the above research project.	✓
6. I understand that at my request a transcript of my interview can be made available to me.	✓

[illegible]	1/8/17	[signature]
Name of Participant	Date	Signature
Natasha Moorhouse	1/8/17	[signature]
Researcher	Date	Signature

To be signed and dated in presence of the participant

31.07.2017
Natasha Moorhouse
PhD Student
Faculty of Business & Law
Business School
Manchester Metropolitan University
07522981917

Manchester Metropolitan University

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project: P4

	Please initial box
1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure.	EG
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	EG
3. I understand that my responses will be sound recorded and used for analysis for this research project.	EG
4. I understand that my responses will remain anonymous.	EG
5. I agree to take part in the above research project.	EG
6. I understand that at my request a transcript of my interview can be made available to me.	EG

Emma Gordon	8/8/17	E Gordon
Name of Participant	Date	Signature
Natasha Moorhouse	8/8/17	Natasha.
Researcher	Date	Signature

To be signed and dated in presence of the participant

31.07.2017
Natasha Moorhouse
PhD Student
Faculty of Business & Law
Business School
Manchester Metropolitan University
07522981917

Manchester Metropolitan University

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project: P5

Please initial box

1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure. ✓
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher. ✓
3. I understand that my responses will be sound recorded and used for analysis for this research project. ✓
4. I understand that my responses will remain anonymous. ✓
5. I agree to take part in the above research project. ✓
6. I understand that at my request a transcript of my interview can be made available to me. ✓

Name of Participant	Date	Signature
	7-8-17	
Researcher	Date	Signature
Natasha Moorhouse	7/8/17	

To be signed and dated in presence of the participant

31.07.2017

Natasha Moorhouse
PhD Student
Faculty of Business and Law
Business School
Manchester Metropolitan University
07522981917

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse
Participant Identification Code for this project: P6

	Please initial box
1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure.	x
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	x
3. I understand that my responses will be sound recorded and used for analysis for this research project.	x
4. I understand that my responses will remain anonymous.	x
5. I agree to take part in the above research project.	x
6. I understand that at my request a transcript of my interview can be made available to me.	x

Judy Tagell	14/08/2017	J.Tagell
Name of Participant	Date	Signature
Natasha Moorhouse	14/08/2017	Natasha Moorhouse
Researcher	Date	Signature

To be signed and dated in presence of the participant

Manchester Metropolitan University

31.07.2017
Natasha Moorhouse
PhD Student
Faculty of Business & Law
Business School
Manchester Metropolitan University
07522981917

Interview Consent Form

Title of Project: Enhancing tourists shopping experience through immersive technologies.

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project: P7

	Please initial box
1. I confirm that I have read and understood the information sheet dated 31.07.2017 for the above project and have had the opportunity to ask questions about the interview procedure.	PM
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	PM
3. I understand that my responses will be sound recorded and used for analysis for this research project.	PM
4. I understand that my responses will remain anonymous.	PM
5. I agree to take part in the above research project.	PM
6. I understand that at my request a transcript of my interview can be made available to me.	PM

Poppy MARELLO	08/08/17	
Name of Participant	Date	Signature
Natasha Moorhouse	8/8/17	
Researcher	Date	Signature

To be signed and dated in presence of the participant

12.5.3 Visitor Interviews

12.5.3.1 Participant Information Sheet

Natasha Moorhouse
PhD Researcher AR/VR

Faculty of Business and Law

Manchester Metropolitan University

Oxford Road

M15 6BH

n.moorhouse@mmu.ac.uk

Participant Information Sheet

Title: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

I would like to invite you to take part in a research study exploring the influence of Virtual Reality (VR) on visitors' perceptions and behaviour toward shopping destinations. Please take the time to read the following information carefully, along with the **Health and Safety Consent Form**, which outlines the potential risks and side effects of taking part. Then, take your time to decide whether you would like to proceed with your involvement in this study. Do not hesitate to ask any questions if you require further information.

What is the purpose of this study?
This study is being conducted as part of the researcher's PhD project. You have been invited to take part in this study because you visit cities to shop.

What is Virtual Reality (VR)?
Virtual Reality (VR) is a completely immersive experience. Once you put on the headset, you will only be able to see the 360-degree video, but you will still be able to speak with the researcher and hear what is going on around you. Because the experience is 360-degree, you will be able to turn your head in all directions.

How long will it take?

It will take approximately 5 minutes to experience two 360-degree YouTube videos in the VR headset. The interview will last between 10 and 15 minutes. The overall time required is approximately **15-20 minutes.**

The VR experience and interview will be conducted in a public place agreed by yourself and the researcher. You will only be required to meet with the researcher once.

Any information you provide is strictly confidential and will go no further than this study. You will remain anonymous throughout the entire research project.

What will I have to do?
You will experience two 360-degree YouTube videos in the VR headset. The first 360-degree YouTube video will show various shopping areas in a shopping destination. This will be a 'virtual walkthrough' where you will watch the 360-degree YouTube video in the VR headset. This will last approximately 3 minutes and 30 seconds.

In the second VR experience, you will be in a virtual retail store. You will be able to explore in 360-degree and move around. This will last approximately 90 seconds.

Prior to testing the VR applications, you will be provided clear instructions on how to use the VR headset. You will remain seated while wearing the VR headset. Should you experience any discomfort, please tell the researcher immediately and the headset will be removed. The researcher will remain present throughout the entire process and you are welcome to ask questions while using the applications.

Once you have experienced the VR applications, you will be asked to take part in an interview with the researcher. The interview will explore your views on the VR experiences including what you enjoyed and what you think could be improved.

Please note that you do not have to answer any questions you do not feel comfortable with and you can question anything that is unclear or where further information is required.

How will I benefit from taking part?
You will benefit from experiencing the 360-degree videos in the VR headset and gain an insight into cutting-edge technologies. You will also benefit from contributing to research using innovative VR technology that could potentially be a part of your future shopping experience.

What will happen with the research results?
By confirming your willingness to participate in this study, you agree for the interview to be recorded on an audio device and later transcribed. The audio recording will be permanently erased once it has been transcribed.

The transcriptions will be stored in an encrypted file on the researcher's password-protected computer known only by the researcher. The data will be used for the purpose of this research project only and all data will be disposed of within three years of the researcher finishing her PhD study.

You are free to withdraw from the study at any given point without providing a reason and no further questions will be asked. Should you wish to withdraw, then any previous information collected from you will be disposed of immediately and will not be used.

Addressing any concerns you may have
If you have any concerns about your participation in this study, you should speak with the researcher directly during the study. Alternatively, should you wish to contact the researcher afterwards, you can do so on the following email: n.moorhouse@mmu.ac.uk.

Should you wish to take the enquiry further, you are advised to contact the researcher's Director of Studies in the first instance via email:

Name: Dr. Timothy Jung

Email: T.jung@mmu.ac.uk

Alternatively, you may wish to take your concern direct to the university and are advised to follow the University Complaints Procedure that can be found at the following address:

http://www.mmu.ac.uk/academic/casqe/regulations/complaints.php

12.5.3.2 Participant Health and Safety Consent Forms

Natasha Moorhouse
PhD Researcher AR/VR
Faculty of Business and Law
Manchester Metropolitan University
Oxford Road
M15 6BH
n.moorhouse@mmu.ac.uk

1st August 2018

Health and Safety Consent Form

Dear Participant,

It is important that you are fully aware of the potential risks and side effects of taking part in this study and experiencing the 360-degree video and the interactive store experience in the VR headset before we begin.

Watching the 360-degree YouTube video and the interactive store experience in the VR headset could make you feel motion sickness, dizziness, discomfort, or nausea. The likeliness of you feeling any negative side effects could increase if you have certain existing or pre-existing illness or medical conditions.

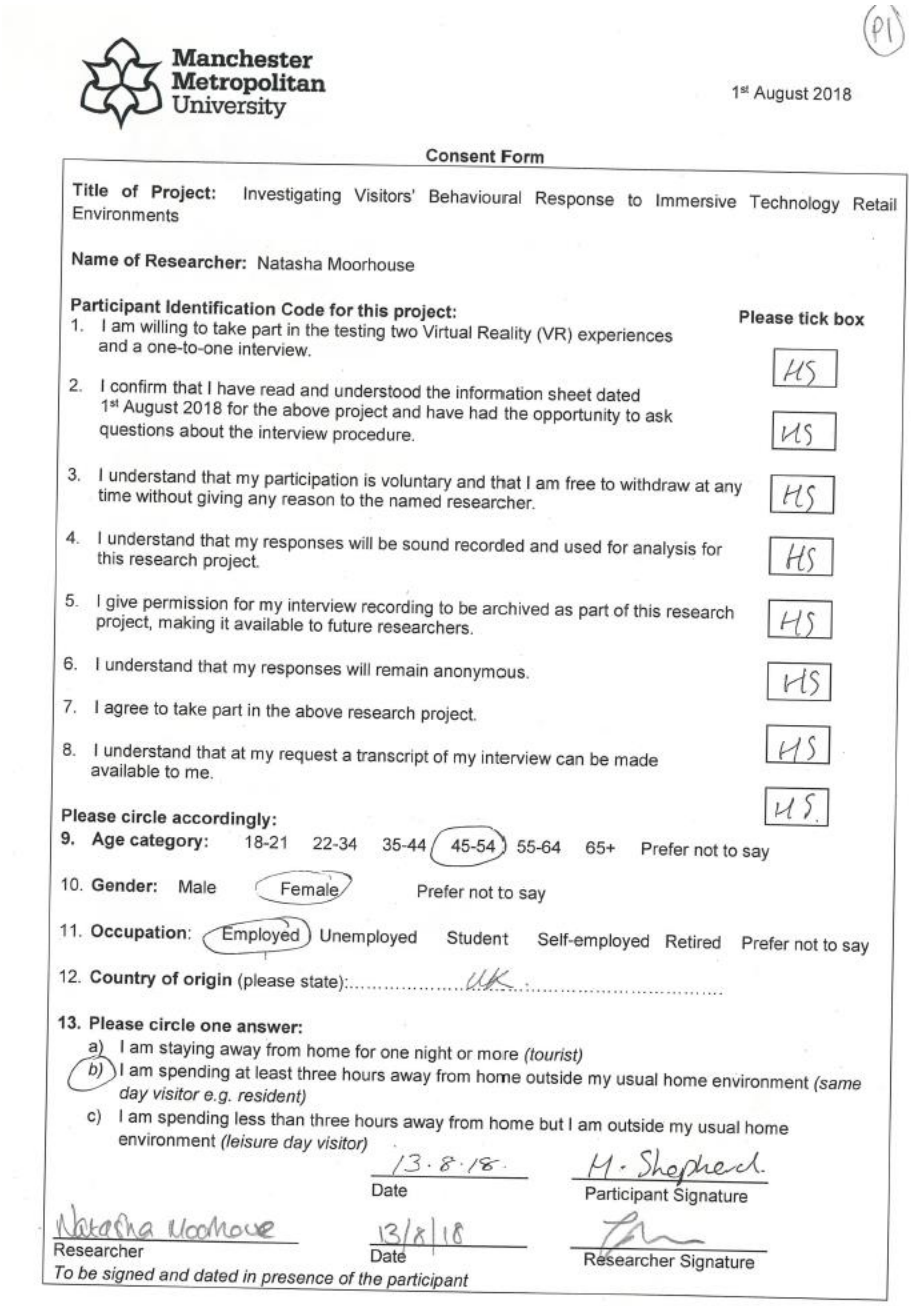
Therefore, should you have any known or pre-existing illness or medical conditions, including those listed below, please inform me that you are unable to take part in this study. You do not have to tell me your illness or medical condition. This is for your own health and safety, and to make sure you are not put at risk.

If you are happy to participate, please complete and sign below and return to me. If you have any further questions, please do not hesitate to ask or contact me on n.moorhouse@mmu.ac.uk. Alternatively, should you wish to take the enquiry further, you are advised to contact the Director of Studies, Dr Timothy Jung, on the following email t.jung@mmu.ac.uk.

Thank you very much for your kind cooperation and I remain with best regards.

Natasha Moorhouse

12.5.3.3 Example of Signed Participant Consent Form



(P1)

Manchester Metropolitan University

1st August 2018

Consent Form

Title of Project: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project:

	Please tick box
1. I am willing to take part in the testing two Virtual Reality (VR) experiences and a one-to-one interview.	HS
2. I confirm that I have read and understood the information sheet dated 1st August 2018 for the above project and have had the opportunity to ask questions about the interview procedure.	HS
3. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason to the named researcher.	HS
4. I understand that my responses will be sound recorded and used for analysis for this research project.	HS
5. I give permission for my interview recording to be archived as part of this research project, making it available to future researchers.	HS
6. I understand that my responses will remain anonymous.	HS
7. I agree to take part in the above research project.	HS
8. I understand that at my request a transcript of my interview can be made available to me.	HS

Please circle accordingly:

9. **Age category:** 18-21 22-34 35-44 (45-54) 55-64 65+ Prefer not to say

10. **Gender:** Male (Female) Prefer not to say

11. **Occupation:** (Employed) Unemployed Student Self-employed Retired Prefer not to say

12. **Country of origin** (please state): UK

13. **Please circle one answer:**

a) I am staying away from home for one night or more *(tourist)*

(b) I am spending at least three hours away from home outside my usual home environment *(same day visitor e.g. resident)*

c) I am spending less than three hours away from home but I am outside my usual home environment *(leisure day visitor)*

	13.8.18	M. Shepherd
	Date	Participant Signature
Natasha Moorhouse	13/8/18	
Researcher	Date	Researcher Signature

To be signed and dated in presence of the participant

12.5.3.4 Example of Signed Participant Health and Safety Consent Form

Manchester Metropolitan University

Health & Safety Consent Form

Title of Project: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

Name of Researcher: Natasha Moorhouse

Participant Identification Code for this project:

	Please tick box
I am fully aware of the potential risks and side effects of taking part in this study	HS
I can confirm that I do not have any known or pre-existing illness or medical conditions including:	
1. I do not have the flu	HS
2. I do not have an ear infection	HS
3. I do not have a hangover	HS
4. I am not suffering from sleep loss	HS
5. I am not taking any medication that could affect visual or vestibular function	HS
6. I do not have epilepsy	HS

13.8.18 — Date — H. Shepherd. — Participant Signature

Natasha Moorhouse — Researcher — 13/8/18 — Date — Researcher Signature

To be signed and dated in presence of the participant

12.6 Appendix F. Data Collection Process and Instruments

12.6.1 Visitor Interview Process

Step 1: To begin, each participant was provided with a verbal and written brief of the study including the interview topic, goals, the stages of the interview process, the time required and the plan with the data afterwards (Wilson, 2013). Participants were also informed about recording, ethical issues and confidentiality and anonymity (Wilson, 2013). Then, the participant completed the ethics forms.

Step 2: In order to gather some background on the participants, they were each asked three warm-up questions (Wilson, 2013) with regards to how often they frequent cities for leisure, the main leisure activities, any digital technologies or marketing channels they might use to explore cities to visit and any previous VR usage.

Step 3: Then, participants experienced two VR retail applications in the following order: (1) a 360-degree YouTube video lasting 3 minutes 30 seconds (hereafter, Application A), then (2) an interactive 3D store (hereafter, Application B) lasting approximately 90 seconds and maximum 2 minutes. During this time, participant observation was conducted, and the researcher wrote down notes on each participant's initial response to the VR retail applications.

Step 4: During the main part of the interview, the first questions asked were considered the most important and required answers from all participants. The questions were modified and expanded depending on the response of the participants (Wilson, 2013). It was found that some questions were a more frequent topic of discussion, therefore, subsequent questions did not always need asking. Then, remaining questions were asked and a final open-ended question offering the participant the opportunity to add any further comments. The participant was then thanked for their participation and the audio device was turned off.

12.6.2 Urban Place Marketers Interview Questions

1. Tell me about your role at [the organisation] and the main goal of the [the organisation].
2. What is the main tourism sector for the destination?
3. Which are the main target markets that campaigns are aimed at?
4. What are the general marketing techniques used?
5. How important is retail to [the city] as a tourist destination?
6. Is it an aspect of the city that is promoted strongly to attract potential visitors to the city to shop?
7. Has it always been at the forefront of the marketing scheme or is it an area that has become more important as more and more people are now travelling to destinations specifically to shop?

1. Current use of technologies to enhance the shopping experience at the shopping centre/urban shopping destination:

1. How important is it for shopping centres (e.g. the Trafford Centre) and urban shopping destinations (e.g. Manchester) to use innovative technologies to attract people to visit? Why is it important?
2. Which technologies are currently being used to attract people from outside the region to the city specifically to shop? *(e.g. online, social media etc.)* **(technologies for marketing)**
    a. Which technology is the most effective? Why?
3. Are there any technologies currently implemented in shopping centres or around the city to enhance the shopping experience particularly aimed at tourists? **(technologies to enhance the shopping experience)**
    a. If so, do you consider those technologies effective in providing a more enhanced shopping experience for tourists? If so, how are they effective? *(e.g. increased brand exposure and engagement/enhanced experience due to promotion access)*
4. Are there any new technologies that [the organisation] is planning to implement into its retail-oriented marketing strategy? **(future plans to implement emergent technologies)**
    a. What is the main purpose of the technology implementation? *(e.g. promotional tool/enhanced experience)*
        i. What difference will implementing those technologies make to whom and how?
        ii. Will the perceived benefits be worth the investment? If so, how will it be worth the investment? *(e.g. city competitiveness as a shopping destination)*

2. Perceived benefits and challenges of implementing AR and VR into the shopping centre/urban shopping destination for tourist consumption:

5. Is [the organisation] planning to implement AR and/or VR into its retail-oriented marketing strategy?
6. Do you see much **potential for AR and VR** in shopping centres and urban shopping destinations?
    a. If so, in what way will each technology be most useful for shopping centres and urban shopping destinations? *(e.g. as a marketing tool/implementing in shopping centres for tourist consumption)* **(perceived usefulness of AR and VR)**
7. In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies? **(differentiation/competitiveness)**
    a. Will the benefits of AR and VR implementation be **worth the investment** from shopping centres and destination marketers? If so, how will it be worth the investment?
    b. Why do you think AR and VR is not being used in certain shopping centres and urban shopping destinations for tourism purposes?

        i. Are there any challenges that organisations may face when attempting to implement AR and VR? **(barriers of implementation)**
8. Do you think implementing AR and VR into shopping centres and in various shopping areas within the city has the power to entice domestic and/or international tourists to visit the city to shop? **(attracting new markets)**
    a. What benefits will AR and VR provide for the tourist? **(perceived benefits for the tourist** e.g. enhance decision-making/new ways to experience products/services)
    b. How will AR and VR change the shopping experience for the tourist? What type of experiences will it create? **(creating new experiences)**

3. Perceived influence of AR and VR on the tourist's response towards the shopping centre/urban shopping destination:

9. Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's **perception** of the [shopping centre] and [the city] as a shopping destination?
    a. If so, how will it change the tourist's **perception**?
    b. If not, why will it not?
10. Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's **satisfaction** with the [shopping centre] and [the city] as a shopping destination?
    a. If so, how will the change in tourist's **satisfaction** influence the tourist's behaviour?
    b. If not, why will it not?
11. Do you think implementing AR and/or VR into the shopping experience has the potential to influence both existing tourists and potential tourists' **behavioural intentions** toward the [shopping centre] or [the city]?
    a. If so, how will it change the tourist's **behaviour**?
    b. If not, why will it not?
12. Overall, what are your views on using AR and VR to enhance the shopping experience?
    a. Do you think AR *or* VR will be the most useful tool for shopping centres and urban shopping destinations to provide a more enhanced shopping experience for tourists? Why?

12.6.3 Visitor Interview Questions

Topic: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

Opening questions:

1. How often do you visit cities (both nationally and internationally) for leisure? What are the main leisure activities you take part in?
2. Can you tell me how you usually find a city to visit? Are there any digital technologies you might use to view the cities retail offer?
3. Have you used VR before?

Interview questions:

1. **Can you tell me is there anything that stood out to you/that you particularly enjoyed seeing?**
    a. How did you find the design?
    b. How did you find the layout?
    c. To what extent where you able to navigate your way around?
        i. Can you suggest anything that could make it easier to navigate/move around? (e.g. signs/symbols)
2. **Can you tell me what sounds did you hear?**
        i. What did you expect to hear?/what would you like to hear?
        ii. What type of music would you prefer to hear?
3. **To what extent did you feel social in the virtual environment?**
    a. Did you feel you wanted to interact with other people or digital assistants? Would this improve your shopping experience? Why?
    b. Would you like to be able to interact with other people or digital assistants (avatars)? Why?
4. **Can you tell me how immersed you felt?**
    a. How comfortable were you with the sense of immersion?
5. **To what extent did you were present in the virtual environment?**
    a. Can you tell me how this influenced your experience/the way you are feeling?
6. **How useful did you find it?**
    a. How might you benefit from **using** it? Can you suggest anything that would **motivate** you to use it?
7. **How comfortable were you with how to use it?**
    a. Can you suggest how it could be improved/made easier to use?
8. **Can you suggest how VR could influence your views of a shopping destination?**
9. **To what extent did the VR experience meet your expectations?**
    a. Is there anything you expected/would like to see? Can you suggest how the experience could be improved?
10. **Is VR something you would use to view a shopping destination prior to visiting?**
    a. What is your main reason for this?
    b. How does VR compare to previous methods you have used to search for a shopping destination to visit (e.g. travel websites/social media)?
    c. Would you recommend it to others?
11. **Do you have any further questions/comments to add?**

Additional questions:

1. With regards, to seeing the different shopping areas, did you find that particularly interesting?
2. In comparison to walking around a real store, how does that compare in the virtual store when you look at the arrow and you teleport into the store rather than walk through?

3. How did you find the layout of the store; did you find you could easily make your way around the store? Were there any barriers to making your way around?
4. If you consider the second application on a larger scale, say for a mall, can you think of anything that would make it easier to navigate your way around?
5. What about signs in there to help you navigate your way through?
6. Did you prefer the commentary in the first one of the music in the second one?
7. What kind of music would you prefer to hear?
8. How would interacting with others improve your shopping experience?
9. When you consider the two applications, do you think you felt more present in one than the other?
10. How did this influence the way you are feeling?
11. If it was a new destination that you had not considered/thought of visiting, or a new shopping mall, if they were to offer some promotional aspects through it, would that entice you there?

12.7 Appendix G. Industry Interview Transcripts

12.7.1 Industry Interview 1

I: Role

P: Head of visitor economy for Marketing Manchester. Work for the tourist board part of the business. Role is to provide strategic guide and support for tourism organisations across the whole of Greater Manchester.

I: Organisation goal

P: We develop a tourism strategy and action plan which is all about maximizing the wealth and job opportunities of tourism and making sure we have a sustainable visitor economy.

I: General marketing techniques used

P: We work closely with Manchester airport. We are very focused on international markets – china, the US, and GCC countries, and some EU markets. We have secured funding for domestic marketing focusing on day visits and short breaks into greater Manchester. We have strong international focus because we are funded by them to develop routes and when we have new routes in e.g. new direct route from China that was implemented last year, we have to help the airport fill them seats. So, a lot of our international marketing is bound up with a priority routes for the airport and we see ourselves as a gateway to the whole of the north of England. A lot of our campaigns are online. We work with airlines, PR, press, trade shows, we bring a lot of bringing the press here, keeping journalists informed. We work a lot with the industry with travel trade, and Visit Britain, that are the international marketing agency overseas, based in London.

I: Main tourism sector

P: The most important sector depends on the market. Manchester is best known for football internationally, so we get a lot of visitors here for football. For domestic tourists,

retail is a key driver, and Manchester is perceived as a very strong retail centre. We have been trying to change the perceptions of Manchester as a cultural destination. Because we have got a strong cultural offer, but we don't have the profile that other cities do, particularly Liverpool, because they have been capital of culture, and they have a strong cultural offer. We have been working hard with our offers and funding to work smarter with the cultural centres to raise the profile of our cultural offer, to attract visitors on the back of the strength of that cultural product.

I: How important is it for shopping centres and cities to use innovative technologies to attract visitors?

P: I think technology for promotion is crucial, but in terms of enhancing the experience I think we are at an early stage with that. A lot of our campaign activity is digital. We follow a philosophy of original/modern brand identity as an original/modern city, so we would always want to be at the front of any cutting-edge developing technology. The problem we face as a tourist board is getting funding, we don't have the resources to plough money into new technologies, so we can be reliant on the private sector to fund initiatives. In the public sector, there is little money for that sort of thing. Most of our money comes from our commercial activity. We as a company would not be able to invest in technology so we would rely on other companies to invest.

I: Will the benefits of AR and VR implementation be worth the investment from shopping centres and destination marketers? If so, how will it be worth the investment?

P: Customer demand would motivate funding for technology from private investors. If we thought it was key to improving the visitor experience, and there was something we needed to do that we had to do, we would try and find a funding source through the public sector e.g. the arts council of the heritage lottery fund, but there are fewer and fewer public channels to find funding from, so otherwise, depending on what the technology is e.g. transport into greater Manchester, it could be that the transport companies have the initiative to fund that because they are a spate entity and they have some budgets to do that. We are a fairly small organisation, we have a five-million-pound turnover, but we don't have research and development budgets. I work in tourism development area and have no money for anything. Anything I want to do, I have to find money from elsewhere. There is a lot we can do by getting in partnerships but if there is something we really need that requires funding then I have to find an opportunity for funding. These days, it is more the case that an opportunity presents itself, and then if I see the potential I take it. Nothing will beat the physical product of the city experience. The basics need to be right for example, is the city clean, safe, attractive to walk in, sit in, play in, drink in, shop in. If there isn't a buzz and a vibe, and there aren't people of all ages doing different things, and creating a buzz around that city, I don't think it matters what technology you have got because it is not going to work. If the city is not attractive to live and work in, it is not going to be attractive to visit. There is a place for technology to enhance a visit particularly if it's something that isn't there anymore, that would be interesting to see and get a sense of. If people are interested in the culture and heritage. But I don't think technology will ever replace the experience because cities are about a place and social interactions, and what's going on in different cultures depending on what age you are and what your

interests are, there are a million different things you could be doing in Manchester. I think that is more important than having an application.

I: How important is it for shopping centres and cities to use innovative technologies to attract visitors?

P: I think technology is important to engage with millennials. In our strategy going forward, there is a lot on keeping up with technology and making sure everything we do is available on mobile. But our role is about providing visitor information and providing marketing campaigns to get people here, and then once people are here, or before they are planning to visit, we need to make sure they have all the right information and tools to have a good time, because we want to send away happy visitors that recommend Manchester as a place to visit. If the bus stop of the future takes off, people will be able to charger their phone, look up digital information on a screen while they are there, catch the bus if you want to etc. MO Bikes are popular because they are mobile enabled, it is a good facility that implements technology and is working well. As generations are brought up with technology I think there is an expectation that you will be able to do everything from your phone and via an application. There are improvements that need to be made in terms of booking systems and that's one of the areas we are trying to work on with our cultural heritage project. A lot of our cultural attractions are free, we want people to sign up and book tickets, which is harder with free venues. I think for someone of the older generation, I don't know what else younger visitors are expecting aside from information and being able to purchase tickets. We need to make it as easy as possible for people to purchase tickets and book their travel related products. 1.4 million travel to Manchester, but 18 million travel to London, which is a massive gap (18x more). London is good because it is connected via transport links to nearby locations such as Bath, Stonehenge etc. We are using technology to make it easier for people to visit Manchester from London but there are barriers around that, because it's got to be affordable, but virgin train tickets from London – Manchester is very expensive, so there needs to be an affordable way of linking in a rail journey with a visit to Man United, or the art gallery etc. so that visitors will come to Manchester today, and a lot of that is about technology solutions, but there are other barriers and factors in that as well. This year we have launched the hop on hop off as a pilot this year to see if we can keep it going. We are working with tour operators, so people can use Manchester as a base, and book an inclusive tour to Chatsworth, or Wedge ward in Stoke, or go to the Lake District, or to Liverpool for the day. London is the capital city and they have the volume of visitors, that's why we are trying to get connections and cheap rail transport links with London. We need the tour operator colleagues to work with us to develop that business, and a lot of that is about easy booking solutions which is the technology again. Manchester is the second most visited city in the UK. Man United FC gets over 300,000 visitors per year to the museum and tour, which is nothing to do with the football game. Manchester City FC will get there eventually. Their visitor numbers are growing with their museum. Manchester is synonymous with football, which is great, but Manchester is about a lot more than that, so our job is to get that message out there to international markets. I think all international markets are interested in football to an extent, but it isn't a key driver for every market.

I: Do you see much potential for AR and VR in shopping centres and urban shopping destinations?

P: I am sure there is potential for AR and VR. As with anything though, you need to identify where it would add value to the visitor experience. One area worth looking at is emerging neighbourhoods, for example first street that didn't exist six years ago, and oxford road is more talked about because of all the improvements. The co-op quarter is something that came out of nothing, and we are currently working with the medieval quarter which is the businesses around the cathedral so the football museum, corn exchange, and the cathedral. But there is nothing medieval that is still there, apart from the hanging ditch, and the back of chats where there is a medieval wall and building, there is not much else. So, I can see that AR would be useful there, such as a walking tour or an application with regards to what has been there, such as the previous cathedral, and going across to Salford to Green Gate. From the historic perspective, there would be loads to talk about there, but what you can see now is a very modern city landscape, so I could see AR working in that way. Maybe using a mobile and a trigger point and get an image what that scene looked like in the 1800's or 1600's. Where the Co-op is that used to be a cotton factory and used to be a tough working area that would have been high poverty levels and that's all been wiped away, so I can see where there could be AR tours, where people get to see what used to be there and what they cannot see now. A trip back in time would be good. We have a successful guided tours group that are always busy, and those tours are about social history of Manchester, so whatever tour you go on e.g. general or pub crawl or literature theme (i.e. Gaskell), or political, it's all to do with history, so you can see that certainly in those situations AR could help guides. VR to me is something that would come in when you are inside a venue. You could even develop a whole visitor experience around VR. If you go to an attraction, and parts are inaccessible, but you can see it in VR, I can see that being useful. At MOSI there would be lots to do because that used to be a railway station, so anything around the history of steam, power, and engines, railways, aircrafts etc. could easily be implemented into a VR experience. I can see where VR adds value to the cultural heritage aspect of the tourism offer.

I: In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies?

P: I don't think VR is a deal breaker at this point I don't think visitor expectations are there yet. We don't feel like we are using out as a city because we don't have lots of AR and VR experiences, but that might be different in ten years' time. I wonder how these things will be funded. We now have three digital walking tours of Manchester that we have developed over the past few years, and we funded that with the arts council funding, but to map, plan, record a digital walking tour, cost us fifteen thousand pounds, which is a lot of money, and we wouldn't have been able to do that without the funding. We have future proofed it as much as possible, so it shouldn't date. That was a small project. For the first 6-9 months we were tracking downloads, but we would have to look at the numbers more recently to see if that was worth the investment. When we are struggling with money, there are more important things to invest in than technology. With technology we have learnt that being quick off the mark isn't always a good thing because people can spend a lot of money investing in new technology and then very quickly that technology becomes obsolete, or it doesn't work anymore, or Microsoft stop supporting it. Over 20 years ago, we all implemented visitor information points, like kiosks, and they broke and failed, so

that was a waste of investment. For me with technology, it's about letting the tech savvy organisations come up with the ideas, let people experiment with it, and then invest. For Manchester, if we invested it would have to fit with the original-modern ethos as we are very protective of that brand, so technology has to play a key role in that. But what we do and how we do it, it would have to be done in a 'Manchester-way'. We pride ourselves as being a city of firsts, and very innovative city with a strong industrial heritage and so anything we do we try and make it feel a bit edgy, a bit different, we won't replicate what London has done we will do it the Manchester way. It would have to fit with the brand. Hopefully we would find an investor, or somebody that wants to do it with us because that's the only way it would happen. If we are putting on something that other cities are doing, why would people come to Manchester to do it? We would have to use technology to enhance our unique offerings so make it different.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

We have issues around way finding. Our cycle routes aren't good enough. There are more transport challenges at the moment. Basic navigation and orienteering are definitely an aspect we have to prioritize, which is part of the general visitor welcome. We need to make it as easy as possible for the visitor.

12.7.2 Industry Interview 2

I: Role

P: Marketing campaign manager

I: Organisation goal

P: Main objective at Marketing Liverpool is to increase the number of visitors to Liverpool city region and develop the tourism offer. So, we do that by working with all the tourism attractions and the hotels and the visitor economy that is across the city region. We are a very small team, so we do carry a number of projects on each of our shoulders, and my role also encompasses the domestic and international audience, targeting the consumer market, and the travel trade market. The people within marketing Liverpool look after other elements for example, we have a convention bureau here, and the conference area in Liverpool is a massive growing area – it brings lots of delegates to the area that all stay overnight and spend lots of money whilst they are here, so it is really important for the city.

I: Main target market

P: We attract a large domestic and international audience. Chinese, USA, EU.

I: Main tourism sector

P: We are lucky that we have been blessed with the Beatles and a fantastic football club and a brilliant maritime history, so that has given us 2 UNESCO heritage accreditations, one for the maritime history and one for our music legacy. The key themes are culture and heritage, music and sport. Liverpool is such a recognized brand throughout the whole

world. You mention Liverpool anywhere that you go, and they automatically say, “The Beatles”, which is a huge luxury because you are half way there basically. But using the Beatles, you can then start to educate people on what else the city has. We are now within the top 5 cities in the UK for our retail offering, so that is since Liverpool ONE was built we have shot up, which is fantastic. It is a real springboard to educate everyone else what the city region has on offer.

I: How important is shopping to drive tourism at the destination?

P: Shopping tourism is becoming increasingly popular, but I think it is not just about the shops, although we now have great shopping areas aside from Liverpool ONE with all the retail giants and designer stores but it’s also the likes of bowl street, which is home to quirky shops, and bohemian shopping experiences. We also have the MET quarter which is built in an old Victorian post office, but now it is full of designer shops and that is having new development put in now such as a cinema. Each area of the city has its own type of personality and shopping so that really important and it’s not just about the shops it’s about the experience now, and I think that show large shopping centres are doing more events and experiential things each season to try and get people in and spend money, eat and drink whilst they are here, so it provides a whole new experience. It has been interesting watching it and reading about it and you can see how it is that experiential aspect that is really drawing people into the city now.

I: General marketing techniques used

P: Types of marketing include e-marketing, visit Liverpool website – the tourism website, that does very well, and we have a huge database which is global. I think e-comms are a very good way of marketing to lots of people at a very low cost, and satisfying all our partners in the city, and we can also measure that as well e.g. a particular email about shopping or football, we can monitor who is reading and where which is useful for our planning going forward and I think digital and website marketing is going to get more and more important as well go forward and social media as well. Since I have been working here we have a dedicated person looking after social media because it is so important.

I: Are there any technologies currently implemented in shopping centres or around the city to enhance the shopping experience particularly aimed at tourists?

P: There aren’t any AR or VR applications being used around the city but there are mobile applications. It is an area that we have been looking at. It is something that needs a lot of investment and time because it is a big project and at the moment I think as with many tourist destinations, that money isn’t there to fund something like that. It might be something we mat look at as part of a collaboration between different partners in the city - that is how we fund a lot of activity now but working together. Mobile applications are the most innovative technology being used at the moment.

I: Are there any plans to implement AR and/or VR into its retail-oriented marketing strategy?

P: It is something we will look at it is definitely worth looking at. One of our biggest tourist attractions, Liverpool football club are launching a new stadium tour and they are using AR in that. I think it’s the first for stadium tours. They have had a new end to the stadium

being built so they are expecting a lot more people to be watching football and come and take the guided tour and the museum tour. The way the application works is by pointing the device at picture of players and they start talking to you, I think features like that would go down well. Another attraction is the British Music Experience, they have new technology in there such as a 3D hologram as part of the exhibition. Going forward, if we are to remain and develop as a top Europe city break destination then we need to look at all the new technology, but it is coordinating it and funding it.

I: Do you see much potential for AR and VR in shopping centres and urban shopping destinations?

P: I see some potential for VR. Several of the attractions have already got audio guides, and to have an element of VR within that, would be an interesting development. How it would work, I don't know. But I could see that as being a cost-effective way of taking that to the next step because for example, The Beatles attraction already has the audio guide in several languages but to have a visual aspect incorporated into that would be interesting e.g. with old footage or conversations with people who knew that Beatles, it would bring it to life a bit more. But the only thing is, it would be quite a personal thing for people to look at, so if you were with people, you couldn't really share it. It is interesting, but I think certain attractions it would work well with, more than others. I think with VR it is the usability that people may not like. Using something like that, would be useful if you are sitting at home, and trying it before you buy it. I would see VR as a good way to promote a city destination for tourism, shopping or whatever, to use that in your home experience, that would maybe form a basis of making your final decision on where you are going to take your next city break or holiday. With Liverpool, where the sights and sounds of the city are so important, I think VR would work really well. It could be, so you are in the cavern with the live music and the buzz going on around, I think it would be really good. Stimulating the senses are being the user feel present in the environment is a good function for VR.

I: In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies?

P: I think implementing AR and VR would give Liverpool a competitive edge because we have always got to be thinking about the next generation of tourists and I have often heard that the Beatles will die out and the youngsters will not be interested one day, but they are. Particularly with John Lennon etc. Using the technologies would be really important to link that history to the millennials, the newer generation, and develop that hunger for people to come here. I think different cities would have a different type of experience AR and VR. I don't think it would work as well with some cities as it would for others because our offer is the music and architecture, there are lots of things that you could incorporate into that technology for example, the live music, the Beatles, the history, the art exhibitions at the Tate, at the maritime we have the slavery museum, so you can experience what it is like to be on a ship as a slave. We have got a lot to offer that could incorporate into AR/VR, so it would definitely help to create a competitive advantage. There is a lot of diversity in Liverpool, so we attract a lot of markets. One of my roles is to develop tourism for overseas markets, and they are not that easy to reach sometimes. So, it takes a long

time to reach them. Particularly with tour operators that bring large groups here as part of a group tour, it takes several years to actually get them here and to change their plans. So that type (AR/VR) of experience would be really good. Also, linking in to the likes of travel agents and companies that sell holidays and city breaks all over the world, for them to use AR VR as an educational tool would be really good. Because they can't all visit Liverpool to experience it and then sell it on. So, to have something like that would be a good way for them to partly experience it and then be able to sell it on to some clients. It is a low-cost way to get the awareness out there.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

P: I don't know how much an AR VR application would be. But as a leading and developing city break destination, we have got to keep up with technology, so I think it is definitely worth looking into to see what the options are for example, how much it would be, in the present time we would have to look at how we can develop something. My guess is that it would be very expensive. Our budgets are different now to how they were five years ago. Going back five years we would have EU money and funding and since the demise of the regional development agencies etc. we have turned ourselves into more of an agency. We are very much self-funding projects and campaigns so that budget for the likes of the development projects and things, I don't know where that money would come from. The whole process of somebody using the VR, then it has to be cleaned etc. I think some people wouldn't be comfortable with that. I think some people are funny with headsets. When going to art galleries etc. Another challenge is getting people to use the application. I guess that is going to be a generational issue. You have the traditionalists, that still like to have a printed visitor guide. They won't use their mobile to find their way around the city, I think that will be a big challenge. Considering that is such as growing market, the older market is growing, that's quite an interesting issue. All them people are ageing, they all have spare time, disposable income, will they be tech-savvy enough to use something like that? I'm not sure. It may be directed at the millennials, but with the cost implications for development and the service, would the end price be out of reach for that market. Those are all things that must be considered.

I: Will the benefits of AR and VR implementation be worth the investment from shopping centres and destination marketers? If so, how will it be worth the investment?

P: I think AR and VR will be the same as mobile phones – they will become widespread overtime once people accept them. I think AR and VR would attract people here to shop because the sites, the sounds, the whole branding, there is sponsorship potential with advertising. It is a really good way to position products, particularly unique things that certain shopping centres have got, so you can target consumers depending on segmentation for example, you may target mothers if there is a play area with the centre, or something special that you can target that market with, there is lots of possibilities.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's satisfaction with the shopping centre and the city as a shopping destination?

P: It is all about adding value to the visitor experience, I think AR and VR would enable them to make the most of their time whilst they are in the city, so they don't miss things that might have been of interest to them. Also, if there is something they can take away with them, to create memories, and sharing them via social media, that is undoubtedly a great way to get our brand out there. It works both ways – it can work as a negative as well, but generally it is really good. Retailers providing promotions would be really good. You could even market to people before they get there for example, if you come on a particular weekend we will have 20% off or you have to come to the store etc.

I: How will AR and VR change the shopping experience for the tourist? What type of experiences will it create?

P: The type of experience it would create is to give people a wider experience of what they might not otherwise get. It might take them to places they might not normally go, they would enjoy their time here a lot better. They would be trying different things to eat, going to different parts of the city, see new attractions, give them chance to find out about new attractions.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's perception of the shopping centre and the city as a shopping destination?

P: To use price promotions I think AR/VR would be a really good way to do that. AR and VR has the potential to change visitors' perception of Liverpool as a tourist destination, but you cannot beat an actual experience of being here. People have got to come here and experience it in real, feel it, see it. But it will definitely add to the visitor experience. If there was a targeting mechanism with the application then the visitor will be seeing and visiting things that are more in tune with what they like, so to me that equals a more satisfied visitor.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's behavioural intentions towards the shopping centre and the city as a shopping destination?

P: It would encourage them to visit again and recommend. There are so many opportunities to target them after the experience, during the experience, if you share with friends and family.

I: What are your overall views of using AR and VR

P: Positive, it is probably going to become the norm sooner or later, but there is a lot of work that needs to be done. When it becomes the norm, we won't have a competitive advantage, so the trick is to get in there first, but without the funding, it isn't going to happen. But it could be really good for the city. But the trick is getting in there beforehand to get that competitive advantage.

I: Do you think AR *or* VR will be the most useful tool for shopping centres and urban shopping destinations to provide a more enhanced shopping experience for tourists? Why?

P: There are very strong benefits for each of them. I prefer the idea of AR because the visitor would be more freed up to use that. It is important to have people here and experiencing, so for them to be guided on where to go around the city through AR, for offers, and deals, going to new places like BME, not everyone knows that they are here, so for them it would be really good, because there is a lack of awareness of where that is, but it is a fantastic visitor experience, it is world class, so that is something that you could really get across by using AR and VR. BME would benefit from both. It would draw anyone in. Airports would be really good to use AR VR with all the retail in the airport, that is a great opportunity whilst they are coming through the airport, on some imagery at the airport, that is another way, or on the planes, in-flight magazines. It could be a project that Visit Britain look at, by looking at key attractions, working hand-in-hand with one of the universities on the tourism side, there is a tourism minister, they might be interested in this as well, maybe providing some help for destinations to get it up. One application for all key attractions in various cities, even a sample/test, using one city as a sample, to test it all out, we would be willing to do that.

12.7.3 Industry Interview 3

I: Role

P: Marketing team member.

I: General marketing techniques used

P: Work on various visitor campaigns – Cheshire Garden Distinction, which is a campaign that attracts people into Cheshire via the gardens. I also work on a campaign called favourite days out, this is our family-oriented campaign, that attracts people to Cheshire via tourist attractions. I also work on a travel trade campaign which encourages groups into Cheshire and Chester. The garden has a traditional target market, has a key horticulture feel. We use a lot of channels that would target mums, dads, grandparents for the family-oriented campaign. For the travel trade, that would target groups, tour operators, specialist groups, overseas tour operators. For the family campaign, we do a lot of social media, especially Facebook as that works really well with parents especially mums. On the Facebook page we have 11,000 likes at the moment, and 80% of those are female aged between 25-45. It is a really good target audience. Facebook works well for family market. Also, its events-given, we are always promoting our special events via Facebook and special offers etc. because it can be quite reactive as well, so I think Facebook for days out. With the gardens campaign, we do a lot of print and put that out into the gardens, and we also go to shows every year in Tatton park, which works really well for that audience as they are a traditional audience. A lot of them do use social media, but there is still quite a big mature market that would still prefer to have literature or shows. With the travel trade audience, e.g. overseas and tour operators, we will go to shows as well e.g. Explore GB, which is a big Visit England event that takes place every march and that's when we have 1-1 meetings with Travel Trade, 1-1 works best with Travel Trade. That is what I think works best for those campaigns, but each campaign has five different channels, and they are: social media, website, print, PR, and events. We do a quite a

general marketing mix. I am involved with activities and campaigns, but not the overall marketing of Cheshire and Chester.

I: Are there any plans to implement AR and/or VR into its retail-oriented marketing strategy?

P: We have an AR application at the moment. We have a digital team in the office, and they are always working with tracking behaviour on Facebook and Instagram and promoting through Instagram Live and Facebook Live.

I: How important is shopping to drive tourism at the destination?

P: Retail i.e. shops, shopping centres, high streets etc. is important for Chester, and when people come into Chester they will see the historic sites, but they will also combine it with some shopping as well. So, I do think shopping is important to Chester. The BID will have more insights into shopping in Chester. I think retail is really important to Chester and I think it has got a good offer as well, because it has boutique shops, as well as high street shops, and its set in the black and white beautiful buildings, so it offers something quite unique as well.

I: Is it an aspect of the city that is promoted strongly to attract potential visitors to the city to shop?

P: I think shopping is important to Chester, and I also think that within Cheshire we have a campaign called market towns, on the website, that's when we promote different market towns in Cheshire, which we have around 6-7 markets towns: Alderley edge, Wilmslow, Knutsford, and I think they are important as a destination because they will attract markets that want to have a wander around pretty towns, go to some shops, go out for lunch. Chester is a historic city, so it pushes itself as a historic city, and with all the roman history and the roman walls, a lot of tourism offers are focused around romans as well so there are the roman soldiers that will take you around the roman walls and the great museum etc. It markets itself as a historic city, but it is quite a contemporary historic city, as there is quite a lot of new stuff going on. Story house is a new cultural centre in Chester, and it is beautiful, it's an art-deco building with cinema, rooftop café/bar, a really fab building. There are the contemporary aspects, and there is a lot of other new stuff going on in Chester as well. I think it is vital to add the contemporary aspect. The history and the romans are very distinctive, but it also is contemporary.

I: How important is it for shopping centres and cities to use innovative technologies to attract visitors?

P: It is important to keep up with the millennials, like Nicola working with the AR, I think that will really help with that. As an organisation, we invest a lot of money into online, social media etc. so the AR/VR could be integrated into that. Also, the offering when you get to Chester/Cheshire, with the story house, there is some nice contemporary bars, so hopefully it will attract the millennials, but there is quite a lot of big competition with Manchester and Liverpool nearby as well.

I: How will AR and VR change the shopping experience for the tourist? What type of experiences will it create?

P: It would be interesting to assess the impact of the AR application that we have just tested. I think there is big potential for it, and it will bring the destination to life, I think just from friends and family that have been to the destination and used AR, they have really enjoyed it and shared their experiences on social media, and it has been a fun thing for them to do, so I think it has got potential. It is a good way to get the city product out there on social media. I think it is important for people to experience places through their own eyes, looking, breathing, without having some additional technology. However, I do not have much knowledge on it. I do know it is a lot of fun to use. I have used VR previously for games, which was loads of fun. But I do not know the useful opportunities it will provide. Although, previewing destinations through VR is useful, when they are not actually in the destination. I think it could provide people with a sneak previous of the destination, I do see its potential there. That is a great idea.

I: In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies?

P: Implementing AR and VR into the destination offerings has the power to differentiate, however, I think it is difficult, because if other destinations are using it, it is a case of how we get there first and do it a bit more distinctive. I think it is trying to stay ahead of the game. But I think it would be useful in terms of our online and social media, I think it would attract attention which is good. I think AR and VR would help attracting attention.

I: Will the benefits of AR and VR implementation be worth the investment from shopping centres and destination marketers? If so, how will it be worth the investment?

P: Regarding investment, I think it would be worth the investment however, I am not aware of the cost. If it wasn't massively expensive I think it would definitely be worth it.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

P: Other challenges for implementation aside from cost, are general awareness about AR and VR. It needs to be made as easy as possible for people to use and understand. I see that as a massive challenge. It needs to be quite clear on what the AR/VR is trying to do. The barrier is awareness and getting people to use the application once it is available.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's perception of the shopping centre and the city as a shopping destination?

P: I think implementing AR and VR has the power to change the destination image, I think there is such a broad range of visitors to the destination, that it would prefer on their preferences e.g. how traditional they are, how tech-savvy they are. It would depend on the individual visitor. I think some people will still want to experience the destination with their own eyes, their own feelings, and then there will be some people that want to experience in some different/new ways.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's satisfaction with the shopping centre and the city as a shopping destination?

P: I think it will add an extra layer to visitor satisfaction, but satisfaction is based on look and feel of the city, customer service they receive, the quality of the attractions and restaurant. I think there are a lot of other factors for visitor satisfaction, but I think it will certainly add to the satisfaction. I think you would walk away like you had been more immersed in the city, like you had been provided with something more. I think the visitor would feel like they had experienced something more in their own eyes.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's behavioural intentions towards the shopping centre and the city as a shopping destination?

P: Regarding behaviour, I think it could change their behaviour because if you have had a good experience you are more likely to recommend to friends and family, and you are more likely to go back again. It might be that they spend more time in a place because they thoroughly enjoyed using the AR/VR, that would contribute to them wanting to come back. I think AR would be most useful for post-arrival/when they are here, and VR for enticing them here/destination marketing/pre-arrival. I think VR could really motivate them to visit.

12.7.4 Industry Interview 4

I: Role

P: Marketing Manchester – 1 of the Marketing Managers

I: Organisation goal

P: Focus on international campaigns – US and EU. Work closely with airlines to do joint marketing campaigns. At the moment we have a campaign with Virgin Atlantic, Singapore airlines, and Thomas cook, so we would then focus on different routes e.g. a new route, a route that needs support, we then focus on them and do marketing campaigns around that. Predominantly they tend to be online, to reach a wider audience. We often go on territory events for example, we did one in San Francisco where we focused on the media, or the travel trade to make sure they are aware of the routes we do and make sure they are aware of Manchester. We are working with Ryanair on various country markets. The other side of my role is then looking after Business Tourism market. We have a conference team that look at bringing conferences to Manchester and secure those businesses. We focus on the marketing side of that, promoting the services we offer to try and get those conferences to take place here.

I: Main target market

P: The US we focus on the millennial market, but it does depend. The virgin route to san Francisco and Boston focuses on the millennials. Singapore airlines is a Houston market, for millennials. We would always make sure our promotions are targeting that market but

ensure that it has that British aspect because the US is still interested in authentic British things. The Thomas cook campaign that targets Boston, is always targeted at families. Because it is more about value messages in terms of cost of the flights, and the reason why families would come to Manchester. We would use various demographics to target our various audiences, and we would look at EU separately and consider the markets we would target there. We split campaigns between leisure and business. The main focus for our activity is leisure.

I: Main tourism sector?

P: The tourism sector we push will depend if we are targeting a country market or international market. We would select various cities in the UK based on drive time, routes that we have via the airport or train to reach Manchester. There are various elements we would feed into why we are then picking Scotland or London as a market to target. It would also depend on the campaign for example the Christmas campaign would focus around retail, but we wouldn't target London because they will do shopping in London. Depending on which market it is depends which campaign we send out.

I: General marketing techniques used?

P: International campaigns tend to be online. For the virgin campaign we have had a mix of display banners, rich media e.g. a page grabber that takes over the whole screen, and interactive things on it so people can click on it. We do a lot of video, so for the virgin campaign we have four themes, sport, culture, music and outdoor. Whereas with the Boston campaign because it is families we use the radio because it is targeting local/family radio. With Expedia we would use banner ads. We can track the banner ads, not just on Expedia, so then we will use media platforms to then push them out, so when people have been on Expedia the media will push them out and follow them around. So, if we see someone is looking for a flight from Boston to Manchester, and the next day they are on another website, the ad will come up. We have a 30-day window, so it will track them for 30 days and we can see if within that 30 days if they have come to the site and booked. So, we can see then whether it has converted into a sale. With the virgin campaign we can see that a huge amount of sales have come through. However, different country markets differ in booking curve i.e. when someone has started booking to the point of purchase. US market is usually 60 days before they book anything. Marketing campaigns are all about return on investment so with traditional methods e.g. print we might target domestic markets however, it is difficult to track, and it is hard to know whether that ad has had any impact or not. The most important is therefore, digital because we can track it and know how many click through we have had, how many people have opened it etc.

I: How important is shopping to drive tourism at the destination?

P: Retail is important to Manchester and that changes by market. For the china and gulf markets, retail is the biggest reason they come here because they get VAT return. We have produced tax free shopping guides, showing how they can get their money back etc. because we know for certain markets it is huge. Not so much for US. But for china, gulf, and domestic visitors, retail is a huge motivation factor and reason for people coming to Manchester. Shopping is one of the biggest drivers for people to spend a weekend here.

For domestic visitors, a lot of our tracking covers the city centre, the Trafford are one of our partners, but the city centre is our retail district, so I would say that the city centre attracts more domestic visitors. Huge numbers go to the Trafford centre, which is included in our marketing, but we want people to come into the city centre and perhaps eat, drink, or to a show etc. whereas the Trafford centre is more shopping and people will go there if they know it.

I: Has retail always been an important aspect to the destination marketing plan?

P: Retail has always been important to Manchester and included as a main driver in the marketing plan.

I: Is it an aspect of the city that is promoted strongly to attract potential visitors to the city to shop?

P: I think it is always a part of the mix but at times like Christmas it is the biggest driver. Along with the Christmas markets which is again retail. For others, retail is alongside other things, but it is always included. I don't think that has changed, it has always been a factor of the marketing plan.

I: New technologies being implemented?

P: Beacon technology has been considered but I don't think we have ever used that. Probably because we have a limited budget. But it is going to change and that is the way it is going. I think new technologies work better with serving ads for products e.g. selling a watch, rather than a destination.

I: Which technologies are currently being used to attract people from outside the region to the city specifically to shop?

P: For destinations, the tourist is already in the market they are already here, so we don't necessarily have to serve them more ads because they are here. This weekend we are doing some shopping activity in Houston, so every year they have a no-tax sales weekend. It is a big retail weekend. We are having a stand offering people the chance to win a trip to Manchester. They have huge digital boards that our video ad will run for two weeks. There is nothing new or technically innovative, but what this shows is how important we think retailing is because we are trying to get people to come here to shop. I think it is more up to the retailer to offer promotions through new technologies because they are already here, so then it is up to the retailers to provide the additional benefits. If we serve them an ad, we have to consider if that will have an impact on Manchester as a destination. A single retailer would easily benefit from providing visitors with promotions.

I: Are there any plans to implement AR and/or VR into its retail-oriented marketing strategy?

P: Virtual meetings is slightly worrying because we want people to come here and visit the destination, so we see that as a negative and wonder what impact that will have on people travelling to a destination, especially considering the business market is so huge for us. It is just a step further from conference calls. However, I think AR and VR will move that aspect a bit further and it will have some sort of impact.

I: Do you see much potential for AR and VR in shopping centres and urban shopping destinations?

P: In terms of leisure, I think AR and VR will be there in the future, but I don't know how. I think with travel, you have to go and experience it, so I don't know how that would work. I think potentially VR could be useful for marketing however, I think it will come down to cost. I think VR is useful to create the desire and interest to want to visit if you offer them a snippet of the destination.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

P: I think the more easily accessible, and cheaper VR becomes, the more people will accept and use, therefore, I think general acceptance will come in the future, in a few years. I think VR could be something useful, but it depends on how easily available it is to produce, and the technical side of the content, and distribute it. I don't know how AR would be used for destination marketing. Working in partnership with airlines, and offering visitors promotional codes, may work. I think the promotional aspect of the destination, I don't see how AR would be used yet.

I: What benefits will AR and VR provide for the tourist?

P: AR would be useful to enhance the experience whilst they are here. Our role is to get visitors here; City Co.'s is to enhance the experience whilst they are here. I think AR and VR could change the destination image from the visitor perception. However, it depends on which market, for example, with US we struggle because people either have no idea what Manchester is, they might have heard of Manchester UTD, and that's it. Or they have the wrong perception of it still being an industrial city from years ago. We work closely with the media, and influencers, to change that perception of the global market.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's perception of the shopping centre and the city as a shopping destination?

P: People are surprised what Manchester looks like now, so I think to change those misconceptions through VR or AR would be useful. You could show what the city looks like, and get people thinking and change perceptions.

The Chinese market often come in groups to Old Trafford and only take a photo outside, rather than the stadium tour etc., they might do some shopping, so football is a driver for some markets. In the US it isn't, they are not into soccer as much, it is not a driver for them, but for the Asian market, it is a driver. For the US, it is more cultural heritage. They love stately homes, but for the millennials, it is challenging to deliver cultural, authentic British experiences, that are still quite cool and quirky.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's satisfaction with the shopping centre and the city as a shopping destination?

P: I think AR more than VR could change visitor satisfaction because that focuses on enhancing the experience once they are here. VR at the moment, I see it as potentially

changing the perceptions and changing the desire and interest and getting them to visit. Therefore, I don't think it would change the satisfaction because they have already made the decision to come. When people come here they are always blown away and surprised because they are not sure what to expect, and they always leave having had a really good time. Whereas I think, AR can enhance those things whether its increasing interactivity at museums, offers etc.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's behavioural intentions towards the shopping centre and the city as a shopping destination?

P: I think VR could encourage WOM because it will get people asking to have you seen that clip? But it relies on people having the tools to watch it. I think AR has the potential to encourage behavioural intentions because if they have had a good time that has been enhanced by AR through interactivity or at a museum or attraction, or through offers, I think all of that will contribute to the visitor coming back with a positive outlook about the destination which all feeds back to WOM, which for all markets WOM is a big driver.

I: Do you think AR *or* VR will be the most useful tool for shopping centres and urban shopping destinations to provide a more enhanced shopping experience for tourists? Why?

P: For marketing Manchester, I think VR has the most potential. As a city as a whole, I think AR because we have to have a certain amount of economic impact etc. So, AR still provides us with a tool because we can promote interactivity at museums, and offers, but our job is to get them here, so potentially VR will do more.

12.7.5 Industry Interview 5

I: Role:

P: Commercial Director

I: Organisation goal:

P: To grow the visitor economy in Chester and Cheshire, we are a marketing agency, so we are focused on getting the brand out there and getting people to know about it, so people come and spend money and have a good time when they are here

I: Main tourism sector?

P: Chester is a heritage city, so we focus a lot on heritage for Chester, but for Cheshire on the whole we look at all different of things like outdoor activities, walking, cycling, etc. We look at Spa and Hotels, weddings, there is a whole range of different kinds of themes we try to push.

I: Main target market?

P: We just an AR project that focused on millennials in the US, it was about attracting younger demographic over from America. It was a partnership between Cheshire and

other heritage cities across the country including York, Bath, Greenwich, Lancaster, Cambridge, Oxford etc. Generally, we attract older audiences, so it was an attempt to attract a younger demographic.

I: General marketing techniques used?

P: The general marketing techniques are mostly digital, social media, paper click, targeting, we do both organic and paid, same with web, organic and paid, we have database, but it is not massif, and generally people are switching off from email marketing. We do not do that much traditional advertising, because we do not have the budget to support it.

I: How important is shopping to drive tourism at the destination?

P: Chester is the tourism hub of Cheshire, but we push the market towns for shopping such as Knutsford, Macclesfield, those kinds of places because they have quite unique shopping experiences, they have lots of small boutiques, and are quite special, so it is complimentary really and it's also distinctive.

I: Is it an aspect of the city that is promoted strongly to attract potential visitors to the city to shop?

P: Shopping is quite critical to the overall Marketing plan. With each of the destinations, shopping is one of the main business components is the retail side, and we do push Cheshire Oaks in the work that we do, and it attracts over 8 million visitors per year just on its own, so shopping is quite a significant element of what we promote. With Cheshire Oaks, that is the shopping destination, if you are somewhere like Chester, you would tend to go for a range of shopping experiences of which shopping would be a part of. Shopping would be a critical component, but it would also include general sightseeing, eating and drinking, nice hotels etc.

I: Which technologies are currently being used to attract people from outside the region to the city specifically to shop?

P: Aside from social media, the technologies we are implementing into our marketing strategy are a lot of video, and we are just about to relaunch our website with a lot of targeted films. We are looking to have a suite of films that have products that are interesting for certain markets. So rather than it just being 'here's our destination, there is something for everyone', we will be able to provide a narrow chapter of our story. So, if you are really into adventure and active sports, we could develop a video around mountain biking or wake boarding, and combine it together into a film, we are doing a lot of that at the moment. The reason behind using video is because the video sells the destination really well, and people are more willing to sit and watch the video. Because technology has improved so much we don't have any problems with streaming anymore like there used to be in the past, but also I think that its instead of doing major campaigns such as summer campaign, winter campaign, it's this concept of 'being always on' and marketing consistently and continuously, and video is one of the ways we can do this because we can tell little stories throughout the year and emphasize different things all year round.

I: Are there any technologies currently implemented in shopping centres or around the city to enhance the shopping experience particularly aimed at tourists?

P: I am not aware of any shopping centres using technologies to promote, I think Cheshire Oaks do quite a lot of digital marketing at the moment.

I: Are there any plans to implement AR and/or VR into its retail-oriented marketing strategy?

P: I am fairly knowledgeable about AR and VR after doing the project for Historic Cities.

We have completed an AR project for the Amphitheatre. Basically, we picked one site from Chester and then each of the other 12 destinations picked another historic site, and it was all about telling the stories in a way that was engaging. We did a lot of study into it for the project and found that people really didn't want something that took them away from the experience, they want something that enhanced it, so they didn't want to walk around a cathedral with a VR headset and not actually experience it for themselves, they wanted it to be light touch. So, what we did was light touch in the end and not dominating over the experience.

I: Do you see much potential for AR and VR in shopping centres and urban shopping destinations?

P: They could use AR for navigation or for searching for products nearby. How effective getting tailored messages whilst you're walking past the shop are going to be, I am not sure. I think that is bordering on intrusive and I think people will start to get shut off from those things. The BID is starting a WIFI project for Chester, where people sign up and they receive push messages about things as they are exploring the city.

I: In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies?

P: Hopefully VR would motivate international tourists to visit, but I think it is yet to be seen. We did some 360 photos and they can view it through google cardboard to get a bit more of an immersive experience. The point was to entice people to come and visit, or to show them things they could come and see. For example, in Durham, the 360 photo is of the cloisters inside the Cathedral, where Harry Potter was filmed, which you cannot visit for yourself, so it is giving you a little bit more to your experience that you wouldn't get if you just went generally. So, I think that is a way VR can be used in the future, and our research showed that people did want to experience things that felt private, or secret, or exclusive, something that is not available right away. Tourism Australia have done a lot of 360 films as a marketing tool. For shopping purposes, I think over time destinations will adopt the technologies but at the moment it is still early days. I think there will be a lot of trial and error over the next few years. Even with what we did it is not 100%, and we would want to refine it further, and we are applying for some funding so hopefully we will be able to do that over the next couple of years.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

P: The main challenges are the cost, because the costs are quite high, you have really got to evaluate the commercial return that you are going to get. Things like people's phones being old or out of date, and not having the ability to use the application well. Also, at the moment, the provision of Wi-Fi is pretty bad in the cities, often in Chester you don't get 3G so if you wanted to download something on the go it would be quite difficult to do so. They also rely on being housed within an application, and peoples phone capacities may limit this. I think technology as it is evolving, and the cost are the major challenges.

I: Will the benefits of AR and VR implementation be worth the investment from shopping centres and destination marketers? If so, how will it be worth the investment?

P: It is hard to say whether the benefits would be worth the investment from destination marketers over time. With the project we just did, for the Historic Cities, I think it will be worth the investment because it is quite plausible, and we can show ourselves to be innovative and we can attract new markets, and get noticed for what we are doing, but would we just do it generally to attract domestic visitors? Probably not because we can't afford it. I think it might be preserved for the private sector to enhance their own experiences and then we as a destination would push it and promote it.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's perception of the shopping centre and the city as a shopping destination?

P: Implementing AR and VR shows the destination to be more innovative, it might challenge some preconceptions, for example, Chester may be perceived as an old-fashioned destination. If you are giving people an insight into the experience they are going to get when they get there, like we do with video etc., then they might be more comfortable about the experience [i.e. visiting Chester]. At the moment, I have been reading a lot about travel and how travel is changing because people are not willing to get lost in a destination, they want all the tools to hand to strictly plan what they are going to do, and where they are going to go, and they use mapping, so they know where they are. I think this technology will help with that need to be planned, and to have insight and know everything like what your hotel bedroom will look like before you get there. But there is a counter which is losing that sense of experiential discovery. If you know something before you come, and then you come and see, for markets that is going to be massively appealing. But for other markets that like the sense of adventure, it will take that factor away. This is the difference between Travel and Tourism. Tourism is more consumerism driven, and travel being more exploratory. I would never go to a hotel without knowing what the rooms look like, but imagine if you didn't know at all, there would be nothing to compare against, so you are less likely to be disappointed. I think there is more of a trend towards in-depth planning and the amount of time people spend planning a holiday, searching, and comparing. Previously, the tourist might have just trusted an expert to give them the best recommendation, or always go to the same places.

I: What benefits will AR and VR provide for the tourist?

P: Additional benefits for the tourist are: it gives the tourist something that they can show off about. For example, we integrated a selfie function with our AR experience, so the user can instantly share it with their friends, and that's really important for people to do that, and it is good for us because it is getting the name of our destination out there amongst their friends' networks etc. So, there is the sharing side of things, and user generated/driven approach to marketing that we value, because we don't have a huge budget, so we rely on small things like WOM recommendation and social media.

I: How will AR and VR change the shopping experience for the tourist? What type of experiences will it create?

P: Type of experiences: I hope AR and VR could be something that would make the visitor feel they have had a unique experience, that they are getting something that not everyone is getting, that they know more than they knew before about the place. That they want to find out more, or return, or visit similar places.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's satisfaction with the shopping centre and the city as a shopping destination?

P: I think AR and VR has the potential to change the satisfaction with the destination. But I think it is about evaluating the commercial return, so there would need to be an incentive to purchase something/access promotions on the application for shops to be motivated to get on board.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's behavioural intentions towards the shopping centre and the city as a shopping destination?

P: I would hope the AR/VR experience would motivate the tourist to re-visit and if they have downloaded the application, it gives us the opportunity to resell them something. For example, we might upsell the Christmas markets to those people to say, 'why not come back'. It gives you a communication channel of continual engagement. I think most important is the content and giving something more about a place that helps people feel like they have had a more complete or special experience so that they feel more fulfilled and satisfied by your destination.

I: Do you think AR *or* VR will be the most useful tool for shopping centres and urban shopping destinations to provide a more enhanced shopping experience for tourists? Why?

P: I think AR would be most useful in the shopping tourism context because it's like you are seeing the reality and AR is enhancing it. Whereas with VR, you are seeing it, but you are seeing it virtually and not for real. With AR, it is good because they are here, at the destination, and we are giving them a bit more, to add to their experience.

I think advertising our use of AR online our website would motivate tourists to visit. The Pokémon Go weekend that just happened in Cheshire, attracted thousands of people here, and they were here because of that event. That is an example for a specific target market and I think AR/VR would be a driver for people to visit because they would want

to come and try the AR/VR as a weekend activity. This is where the VR experience of the destination before you get here is unappealing to us because we want people to actually come and see it for themselves. We want there to be something for visitors get when they get here that is unique. You want the visitor to experience and be surprised and wowed in reality. I think it would be useful to do snippets in advance of the highlights, but not the whole sell. A short promotional video would be good.

Dean is doing an AR event on shopping and heritage. [shows application, presentation and videos] [England's Historic Cities] We did this feedback and we asked them to plot where the historic cities where, and as you can see it was quite bizarre. We did this experiment with New York tourists because the heritage and history are really interesting to that market, and we are seen as being a little bit obscure and unappealing because we are not where everyone else goes (e.g. London). But they said things like the unique assets that we have, and their slight significance are enough to grab attention, but they really want to know about the stories and how things change over time. The more sophisticated and immersive the technologies, the less appeal it seemed to have. They do not want the application to detract from the experience, so they just wanted simple text overlays of objects, or swappable photos (of the artwork previously and now), and things that allowed them to go behind the scenes and access places you are not allowed to go and see. Things about a post-trip, so with social sharing, and they really wanted it to be personalized so they could decide themselves where they want to go. So that focus group research was really important to refine and from a visual point of view we decided to go for an illustrative approach for everything. So, we had 68 new pieces of artwork created so that it felt a bit different. Because if you see the same application with photos it would look a bit weird. The images where made to make it look a bit different and attention grabbing.

12.7.6 Industry Interview 6

I: Role

P: Digital executive at Marketing Manchester - deal with all the websites including Visit Manchester, Invest in Manchester, Marketing Manchester etc. Deal with social media, creating entertaining video content, digital content, writing blog posts.

I: Organisation goal

P: Aim of the organisation is to attract domestic and international visitors to the region not just Manchester as a city, but Greater Manchester as well, and to try and increase footfall in the city centre as well.

I: Main target market

P: Attract a bit more domestic but we do get a mixture, but we run separate international campaigns as well. Currently we have a China campaign, a US campaign running from Boston and San Francisco. About to launch an EU campaign, and a UK staycation campaign to attract relevant markets.

I: Main tourism sector

P: Sport is a big tourism sector, but it pushes itself. Push culture and as many of the museums are free in Manchester that is a big draw. Attract families, try and push a family message to a family crowd.

I: How important is shopping to drive tourism at the destination?

P: Retail is a big part of the tourism offer. We push retail to some marketers for example we have just done the GCC campaign to all the gulf states, we push shopping heavily to them and to the Chinese market because our research shows they are big shoppers. With the China campaign we have WeChat, and we trying to bring in WeChat pay. We are in conversation with the big retailers such as Selfridges, Harvey Nichols etc. to bring WeChat pay to them to make it easier for them to pay whilst they are here. Today's generation are using WeChat pay rather than cards and cash.

I: How important is it for shopping centres and cities to use innovative technologies to attract visitors?

P: It is important to for shopping centres and destinations to use innovative technologies in the tourism offer specially to attract international markets.

I: Which technologies are currently being used to attract people from outside the region to the city specifically to shop?

P: The GCC market and the Chinese market are very tech savvy, so we are trying to look at other ways to attract visitors aside from social media and websites.

I: General marketing techniques used

P: We are looking at innovative ways to use applications and WeChat, and VR for one of the campaigns. But I don't know how soon we will implement it.

I: Are there any plans to implement AR and/or VR into its retail-oriented marketing strategy?

P: We are looking at VR for our European campaign to try different ways to get people engaged. Allowing them to preview the destination.

I: Do you see much potential for AR and VR in shopping centres and urban shopping destinations?

P: I see potential for VR but the hurdles that we have come across is how do we use it. Because we have seen other travel organisations using it, Visit Maldives, but they put it into travel agents and they put VR headsets into travel agents, so the potential tourists can preview the destinations. So, we are challenged by implementing something like that and which platform to use because we are relying on our markets to have VR headsets. We are unsure of how to implement it and we need to do further research. I see potential for it definitely, whether that it is in two years or four years, the time will definitely come. We are relying on the visitor to have the quality equipment. Maybe in a few years every household will have a VR headset so then it would be easier to reach them through VR

and attract them to the destination. I see less potential for AR as I do not how we would utilize it and what platform we would use.

I: What benefits will AR and VR provide for the tourist?

P: I think it is good for visitors to access more information, promotional offers etc. We were looking at providing the same benefits for WeChat and from a retail aspect around Exchange Square. It costs quite a lot of money to implement applications and AR features, but we were considering investing in that area for WeChat. There is potential definitely.

I: In what way does AR and VR implementation differentiate those shopping centres and urban shopping destinations using AR and VR from those that are not using such technologies?

P: Implementing AR would set the city ahead of the crowd. Becoming more technologically advanced as a city is what we need to do. Even having Wi-Fi in the city that is accessible is something we need to consider. I don't know if London has anything like that, but it would definitely set us ahead of the crowd and make the city more attractive to the younger crowd, which I think would be good because at the moment we attract a lot of families and not so much the younger generation. We attract younger generation for sports, but it would be helpful to include that sort of audience and attract them with new technologies because it is hard to connect with the millennials because social media just does not work anymore. Social media have changed all their algorithms which makes it impossible to be able to get your message out there unless you spend loads of money. So, the millennial crowd, snapchat is huge for them, but that is hard to implement as a destination, so technologies such as AR and VR are the way forward to connect with the millennials. If AR had a social aspect, that would be a good way to get the brand out there because user generated content always works best anyway. For example, on Instagram, we always re-upload our users' photos because it gets more engagement because people then send us photos and ask us to share their photos. I think AR and VR would have to be a huge investment, but I don't know what the numbers would be in terms of increasing visitor number, so it would have to be a trial run depending on the response we get. It would be hard to measure. CityCo are in control of the BID and analyse footfall etc. They are mainly retail but organize Halloween events and Christmas events.

I: Are there any challenges that organisations may face when attempting to implement AR and VR?

P: The main challenge of implementation would be cost, and then whether people have VR headsets, or the technology to use the headset. We would have to trust that our audience have the facilities to use it. I think with AR, as it is mobile enabled it would be more attractive for user acceptance. The airport is considering implementing AR, they are using Beacon technology.

I: Does implementing AR and VR have the power to attract new markets?

P: VR more so has the potential to attract international visitors and make them aware of the city product. I think AR would be a big draw for domestic visitors as well. I think if we could make them aware of it and that is accessible in the city, then it would draw them

here. I think it would create a more seamless experience. From a destination marketing point of view, it would make booking and planning the trip more seamless. I think VR would be more useful in helping people decide on Manchester as a destination, and then AR when they are here to enhance the experience.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's perception of the shopping centre and the city as a shopping destination?

P: I think people have a skewed perception of Manchester, they think it is still the industrial city that is was years ago, so I think implementing AR and VR would change people's perceptions because there are some beautiful parts of Manchester and hopefully the technologies would make people realize that. If you could change people's perceptions before they got here and make them consider Manchester as a destination would be a great thing.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's satisfaction with the shopping centre and the city as a shopping destination?

P: It would change the visitor satisfaction and improve their experience.

I: Do you think implementing AR and/or VR into the shopping experience has the potential to change the tourist's behavioural intentions towards the shopping centre and the city as a shopping destination?

P: It would make them recommend to friends and family.

I: Do you think AR *or* VR will be the most useful tool for shopping centres and urban shopping destinations to provide a more enhanced shopping experience for tourists? Why?

P: I think AR as a marketing tool is great, VR faces more barriers but will be useful in the future. AR when they are here, VR to get them here.

12.7.7 Industry Interview 7

Role: Marketing and communications officer

P: It's quite a multi-planned approach really so it is to make Chester a more visually appealing place for people. So, we do a lot of work with the council and different companies to make sure Chester is kept really clean and tidy so that it looks presentable and also, we work with the 500 businesses that are a part of the BID. Do you understand how BIDs work at all? So, we've got about 500 businesses and basically, they pay us 1% of their business rates and that works as a Levy and that basically covers the BIDs running costs. So, we use that money to make improvements to the city centre.

I: What sort of businesses, is it individual companies, large or small organisations?

P: Anything from Marks and Spencer's to like independents coffee shops.

I: Do you develop campaigns to develop the entire city image?

P: We do work with quite a few partners but really seasonal campaigns, so your peak shopping times like we are very heavily involved with the Christmas campaign. We get involved by providing additional lighting and providing funding for the parade. Yeah there are quite a few bodies in Chester that pull the money together and work on these projects.

I: Do you also work with the individual retailers separately?

P: It depends what they want us for. For example, Tom who does the social media here has got a meeting to set up a Facebook profile and a Twitter for a local grocery store. So, he is going to go and help them do that. So yeah, we can do it one-to-one, but we can also do the full campaign that can benefit all the businesses in the city centre.

I: How important is retail to Chester as a tourist destination?

P: Well, Chester used to be one of the main places in the UK for shopping outside of London, so it's got a really good reputation historically. I think it's very important because it's quite a unique place where you can get lots of different things in one visit. So if you are a tourist and you are coming for a long weekend, you might go on a river boat, visit the cathedral, do a bit of shopping, visit Chester Zoo, you know, there's quite a lot of different things you can do so I think it's very important having retail as part of the mix because I do think people like to shop so having that to offer people, I think it's very important.

I: How important is it for shopping destinations to use new technologies to attract people to the destination specifically to shop?

P: When you say new technologies, what kind of thing are you thinking of?

I: Speaking quite broadly really at this point, maybe social media, online websites, and also the general marketing techniques you might use to attract people to the city to visit?

P: I think it's vital to be truthful. I think if you're relying on somebody just passing by your shop that's quite tricky. If you are using a combination of social media, website, maybe some direct marketing as well, then I think obviously you up your chances of somebody being just a passer-by to being a customer.

I: Which channel do you think is most important for attracting people to visit?

P: For us, I would say website and social media works really well. I mean we use Mail Chimp to contact everybody and keep them up to date with special offers, so I think that's really useful.

I: Do you think it's the same for shopping centres such as Cheshire Oaks, do they use the same kind of channels to attract visitors?

P: I would assume they use the same channels. We don't work with the shopping centres such as Cheshire Oaks, it's just the city centre ones.

I: How familiar are you with Augmented Reality and Virtual Reality?

P: I used to work for a Tech company, so I have a decent idea but in terms of how that's being used in retail I think we're a few years off that, that's my understanding.

I: Do you see much potential for it?

P: Yes, I think we'll see a lot more of it in the future.

I: How do you think it will be best used?

P: Say you are using VR when online shopping, if you could figure out a way to see how that outfit would look on you before you purchased then that would be really good for online. In terms of in-store shopping, maybe some kind of personal shoppers.

I: Do you know of any retailers planning to implement AR or VR?

P: Not off the top of my head. To my understanding, I think we are a couple of years off that kind of thing. What kind of thing are you thinking?

I: Well, I'm basically looking at the use of AR and VR in terms of shopping centres and the wider urban destination, so VR could be used to motivate people to visit, if they could see in the headset all the different shopping areas within Chester that might motivate them to visit. In terms of AR, benefits for the visitor include for example, accessing promotions or navigation around the city. So basically, exploring the potential that you think AR and VR has are around the city?

P: Yes, lots of potential. I don't think, I mean for us it's the same as always. We're a non-profit organisation so anything we put money into has to be agreed by everyone involved and that I think would be something that your bigger high street stores would be looking at rather than your more independent ones.

I: OK, so you think it would up to the bigger retailers to develop these AR or VR applications themselves rather than the entire city project?

P: I think you would struggle to find the budget for an entire city project. I think it would have to be something that you have a lot of different parties involved with.

I: OK. What other challenges do you think of implementing the technologies would be?

P: Taking the user along with you because if it's something that's completely new, I mean I don't know of any place where it's happening at the moment, do correct me if I'm wrong, but I think every time something new comes out, people generally don't like change so it's taking them along on that change journey and re-educating them on how to use something like that.

I: Yes, so getting them do use it and to get the message out there. Because I know a few retailers who have tried it for example The Trafford Centre had the VR experience last Christmas. But they are mainly a pilot test and its investing the money to take it further and getting people to accept and use it.

P: Its really difficult because getting people to spend money now after the recession they've got a tight grip on their budget, so I think unless they've got genuine proof that it's going to bring them back some income, people aren't willing to take a risk as much.

I: Do you think implementing these technologies into the visitor journey has the potential to attract domestic and international markets to the city to shop?

P: Yes, if it was something we brought out first then it would be a point of difference wouldn't it. But it's tricky with Chester in terms of the city centre because it's got a very historical aspect of it so it's that fusion of the modern and historical context, but I think, well I mean, definitely from my understanding of technology we are going to be using a lot more technology in the future. I think the quicker we can get on board the better.

I: I guess it's like mobile phones, it took people a while to accept mobile phones and now everyone has them. Do you think AR and VR would be the same kind of thing?

P: Yes, I mean it's hard to know what kind of tech things will really take off because I've seen some things coming out and it's like QR codes for example, everyone thought they were going to a massive hit, but they've not really stuck around people don't use them that much. So, it's about what will stick around, but from what you're saying with The Trafford Centre piloting it then it sounds very promising.

I: Yes, because with AR, they went of QR codes until object recognition now there isn't much use for QR codes. My next question is whether you think these technologies might change tourist perception of the destination and how will it change their perception?

P: I think, it's just tricky for us because in a way we want to remain with that heritage feel to it and I suppose with Chester, we are a little bit concerned about going too far with tech. Because that's the uniqueness about Chester, you can get a modern shopping environment, I mean it's possible, if we are having a new shopping centre developed in a few years and that's a tech hub. Because there are other shopping centres on the outskirts of Chester aren't there. Yeah, it could be that we are re-positioned like a fusion so that would be really good if we could do something like that.

I: I mean would it depend on your target market as well because being a historic city I presume you attract diverse groups of people?

P: Yes. I mean we do get a lot of Chinese and Japanese tourists. The last time I went to Hong Kong going back ten years, their technology was way more advanced than ours. You know, it might just be something that they are used to. I mean, it depends how useful it is. If it saves people time, saves them effort, and it's useful, generally I think people will buy into it.

I: Yes, because it's all about adding value to the visitor experience, if it's not providing anything extra the novelty factor will likely wear off. My final question is do you think it would influence tourists' behavioural intentions so if they perceived Chester to be an innovative city, do you think that would influence them to

recommend the city destination to friends and family, word-of-mouth recommendation?

P: Yes definitely. I think if you view something different and new that you haven't had somewhere else then definitely.

I: Do you AR or VR would be most useful tool for shopping purposes?

P: I honestly don't know. I think, no I don't know I would have to see some trials and see some evidence.

END OF INTERVIEW.

12.8 Appendix H. Visitor interview transcripts

12.8.1 Visitor Interview 1

Date: Mon 13th Aug '18

Location: Manchester City Centre

Length of interview: 7 minutes 52 seconds

Gender: F

Age category: 45-54

Participant No.: VP1

I: How often do you visit cities?

VP1: Probably about once or twice a week.

I: What is your main reason for visiting?

VP1: Shopping.

I: How do you usually find a city to visit? Any technologies you use?

VP1: The internet. Usually on my mobile phone.

I: Have you used VR before?

VP1: No.

[EXPERIENCES VR]

I: Can you tell me anything you enjoyed seeing/what stood out to you?

VP1: I felt like I was there in the experience.

I: How did you find the design of the applications?

VP1: [the 360-degree video] was really good it was just too fast, it skipped through, compared to the other.

I: So, you could prefer a slower pace, so you can take in what you are seeing?

VP1: Yes.

I: How did you find the layout/design of the second application?

VP1: I found that one hard to go in and out of. The first one was easier because I could look around more and focus.

I: So, you prefer more of a passive experience where you are just looking rather than interacting with the environment?

VP1: Yes.

I: How easily where you able to move around in the second experience?

VP1: Not very. It was quite challenging.

I: Can you suggested anything that could make it easier to move around?

VP1: I just think it would be easier if you could walk into it, rather than rush into it, and could take your time looking around. It would make the experience feel more natural. It was very difficult to focus on the arrows.

I: What type of sounds did you hear?

VP1: People on the first one. Could hear a lot more on the first one than the second one. The second one seemed a bit limited. Because I just went into one place.

I: If that was on a larger scale (e.g. shopping mall/destination) would that be more useful?

VP1: Possibly. [If it was the destination] it would be like using Google Street view, you would be straight down it.

I: Is there any sounds you expected to hear/would like to hear?

VP1: I preferred the commentary. It was a guide to what's going on, where am I going, without having to think about it. It gave more information.

I: Would you prefer the information through sound or written?

VP1: Through sound, I like to listen so then I can take it all in.

I: To what extent did you feel like you wanted to interact with others?

VP1: One the first one, you felt like you were there with that one. Like you were part of it, that you could talk to people, and like they were looking at you.

I: Would it improve the experience if you interact with real people in the virtual world?

VP1: Yes, definitely.

I: How would that improve you VR shopping experience?

VP1: A lot. I think you could get a lot more information from that.

I: The type of people you would like to interact with, would that be sales assistants or people that live or work there?

VP1: Live or work there.

I: Can you tell me how immersed you felt?

VP1: Very immersed in the first one. I felt comfortable with it. I have never experienced it before. It is fantastic. Loved it.

I: Can you tell me how this influenced the way you are feeling or felt during the experience?

VP1: Yes, very it influenced me a lot. It is something I will take on board [using VR for this purpose]. It was exciting, and it is new for me.

I: How useful did you find it?

VP1: Very. It would be the first thing I would use now [to search for cities to visit] if it was available to me. You get more information and more of a feel for a place before you went there, so you feel like you've been there, and it would make your visit more enjoyable when you actually go.

I: So, you could plan where to go/what to do when you arrive?

VP1: Yes, you could.

I: Is there anything that would motivate you to use it/for decision-making?

VP1: Possibly if I am looking for bargains, for restaurants that are value for money.

I: Accessing promotions in VR, then when you get to the destination it is all in place for you?

VP1: Yes. It would help to plan the trip before you go and then it is all taken care of when you get there.

I: How could VR influence you views of a shopping destination?

VP1: What like I would use it all the time? [Dubai] was different to what I thought. I felt like I seen more of it. Like when you look on the internet or in a brochure, I felt like I was there and had a more open view of it.

I: Is there anything you would expect to see in VR?

VP1: Probably a bit more of the city, more of the ins and outs, the backstreets, the little areas where people live, what's going on, not just the bigger picture and the shopping experience. More traditional and local markets [not just main tourist attractions], transport links and so on.

I: So, the broader tourist experience even for shopping destinations?

VP1: Yes.

I: Is VR something you would use now to make your decision on where to visit?

VP1: Most definitely! Because you got to see more, the bigger picture. Like I said, the only way I can interpret it is going on Google Street view and then you know where you are going. Then when you are there it would make the whole experience a lot better and more comfortable.

I: Would you recommend to others?

VP1: Yes, definitely.

I: Any additional comments?

VP1: I enjoy the Bird's Eye view of things, looking down. For me, I am scared of heights and I think this could work with curing that. Can I try another city? It was all a bit blurred for me. I had trouble with getting the focus right. If it was in Thomas Cook I would definitely be more likely to buy the holiday, they would sell it to me without a doubt. With a brochure I am more likely to take it home, have a think on it, and then probably go off the idea. I would definitely do my food shopping in there, and definitely be tempted to buy a holiday.

END OF INTERVIEW.

12.8.2 Visitor Interview 2

Date: Mon 13th Aug '18

Location: Manchester City Centre

Length of interview: 15 minutes 45 seconds

Gender: M

Age category: 35-44

Participant No.: VP2

I: How often do you visit cities?

VP2: Every week or two.

I: What is your main reason for visiting?

VP2: Usually social, meeting up with friends or shopping.

I: Can you tell me how you usually find a city to visit?

VP2: Its usually word of mouth or through the internet, using my mobile phone.

I: Have you used VR before?

VP2: I have used it briefly but not in this sort of context, shopping.

[EXPERIENCES VR]

I: What did you enjoy seeing?

VP2: I enjoyed seeing all the shops and seeing how they look in real life without really being there. I think that is a cool factor of the technologies.

I: With regards, to seeing the different shopping areas, did you find that particularly interesting?

VP2: Yes, it is very interesting because sometimes when you hear about certain shops in the destination, you never really know if it is going to be a small shop or a large shop, or anything like that. so, it was good to get a feel of what the shops will be like before actually visiting the mall.

I: How did you find the design of the experiences?

VP2: I thought it was really good. I like the way you could navigate around the shop and it was not just stationary, I could look around, because it did really feel like I was there.

I: Did you find it quite easy to navigate your way around?

VP2: Yes, I found it very easy you just had to focus on the arrows and it would move for you.

I: In comparison to walking around a real store, how does that compare in the virtual store when you look at the arrow and you teleport into the store rather than walk through?

VP2: Yes, I mean I think it was really good. I think it has got great potential as well especially with shops getting busy and overcrowded at peak times. I could see a lot of people using this technology because they could sit at home. From the comfort of their own home, they could do some shopping for example.

I: How did you find the layout of the store; did you find you could easily make your way around the store? Were there any barriers to making your way around?

VP2: Yes, I could easily navigate, it was pretty straight forward.

I: If you consider the second application on a larger scale, say for a mall, can you think of anything that would make it easier to navigate your way around?

VP2: Yes, if it was developed on a large scale, this software would be very useful. If you could type in the shop that you wanted to go to in the bottom corner of the screen and it would actually teleport you to that shop instead of having to navigate your way around the entire shopping mall, which would take as long as shopping in the physical, rather than in the virtual.

I: What about signs in there to help you navigate your way through?

VP2: Yes, [signs] definitely.

I: With regards to the sound, what kind of sound did you hear in the experiences?

VP2: The sounds where very relevant to the culture with it being in Dubai. The sounds were good, it didn't seem to be off putting. I did enjoy them, it added to the whole experience in the environment.

I: Did you prefer the commentary in the first one of the music in the second one?

VP2: I did like the commentary, only because I have not been to the destination. I feel that if I had been to the destination then it would be a bit more, like I wouldn't need to hear it. But I feel that for a person visiting a new destination then it would be very helpful. I did feel like I was on an actual virtual tour of the place. It really did give me a feel for the destination.

I: What kind of music would you prefer to hear?

VP2: It would be good, if you were to be shopping in your own home then it would be good to have a choice of your own music that you want to listen to from your own playlist, playing in the background to make you feel more at home and more relaxed.

I: With regards to feeling social in the virtual environment, did you feel that you wanted to interact with other people or a virtual assistant?

VP2: Yes, I think some sort of virtual avatar would be a lot better because it did sort of feel like it was an apocalyptic scene with no one else being there in the mall whatsoever. If there was maybe like you said, a digital assistant behind the counter and then a few people browsing. It would just make it feel like a more worldly experience.

I: How would this improve your shopping experience?

VP2: The technology as a whole?

I: More the interacting with people.

VP2: I think it would be more of a real sort of feel. Maybe make me feel a lot more relaxed and not like I was in an isolated environment.

I: Perhaps, say you mentioned using it at home? If you were to shop in a virtual environment where no one is there, then that takes away the social atmosphere that people get when shopping?

VP2: Yes, definitely. It is always nice to have a bit of an atmosphere, rather than having no one around whatsoever.

I: Yes, of course. Can you tell me how immersed you felt?

VP2: I definitely felt like I was there. 100%, I felt immersed into the environment.

I: How comfortable where you with the sense of immersion?

VP2: Yes, I was very comfortable with it, I enjoyed it.

I: To what extent did you feel present?

VP2: Going back to what we were previously saying, I think I would have felt more present in the environment if there was a bit more interaction and a bit more going on around me. But apart from that, I did feel like I was in the store, I just felt like I was in the store when it had closed.

I: So, it needs to draw more similarities with your real shopping experience?

VP2: Yes, to make that connection between the physical and the virtual environment.

I: When you consider the two applications, do you think you felt more present in one than the other?

VP2: Yes, I would say I definitely felt more present in the first one because in some of the destinations where we were, we were in a bar on the beach for example, and there were people sat around having some drinks and with the waves, there was real sounds. Whereas in the mall, it was pretty much the mall sounds (music), and the shop and that's it. So, I did feel more present in the first one, with the virtual tour.

I: How did this influence the way you are feeling?

VP2: I just felt more immersed in it. It felt like more of a real environment, rather than it being digital.

I: If you were using this to show you what the city has to offer in terms of retail, how useful would you find it?

VP2: Yes, I think it is very useful and the actual technology has a lot of potential. I just feel that the first virtual tour, that was a video from the destination, whereas the second one was more digital renders of the actual shop that had been made on a computer. So, I feel it would be a lot more useful if it was to progress, definitely keep it with the actual images of the destination rather than the digital renders of it. I think it was used with the 360-degree tour, it felt like I was actually there rather than in some sort of virtual computer world.

I: How might you benefit from using the VR?

VP2: It definitely gave me a taste of the destination before actually going there, so it is very useful in that sort of aspect of giving you a bit of a taster before you actually go. Because I do feel like I know it a tiny bit now just from doing the tour.

I: So, would you say it has enticed you to visit the destination?

VP2: Yes. Definitely.

I: Can you suggest anything that would motivate you to use it?

VP2: I mean, I would definitely be motivated to use it just because it is new technology and I am really interested in that sort of thing. But I think, what the technology is actually doing is making a good impact on the whole sort of tourist, shopping, retail sector. I think it has got a lot of great potential.

I: If it was a new destination that you had not considered/thought of visiting, or a new shopping mall, if they were to offer some promotional aspects through it, would that entice you there?

VP2: Yes, definitely. It is just another way of reaching out to people and make them aware.

I: How does it compare to other methods you use, I know you mentioned online/mobile phone?

VP2: It's just a completely different dimension and way of looking at things. What you see on the internet is a few pictures, and then just a lot of text heavy stuff. But [in VR] you are fully immersed in it, and you can see for yourself what the environment is going to be like, rather than trying to make use of it you know just from a few pictures that are always taken at certain specific angles. But yeah, I think it's just a completely new dimension.

I: So, it gives you a more realistic expectation of what to expect before you arrive?

VP2: Yes.

I: How comfortable with using the headset and application?

VP2: I found it very easy to use, I did not have any problems with it.

I: Can you suggest any way it could be improved or made easier to use?

VP2: I thought it was quite easy to use anyway. I've seen some things with PlayStation and VR, where you put the headset on and move with the controllers. It might be easier if you had some sort of joystick to move around with. Rather than trying to focus on [the arrows] for a certain amount of time, but apart from that I found everything very easy and straightforward.

I: I guess that applies to the second experience you tried?

VP2: Yes, I was speaking about the second experience.

I: Can you think of any way VR might change your views/perceptions of a shopping destination?

VP2: It would definitely influence perceptions of the new place, because like I said you feel like you are actually in the environment rather than sort of making a mental picture of it from the information you read.

I: You mentioned that you have not visited Dubai before, by seeing it in VR, is that what you expected of Dubai?

VP2: Well, did not know what to expect but it looked amazing and it definitely, like, encouraged me to go. You know from seeing the virtual tour. Because it's never been a place that I have considered. But now after seeing it and seeing all the amazing architecture, I really would be interested in visiting.

I: To what extent did VR meet any expectations you might have had before you tried it?

VP2: It definitely met my expectations, I mean did not really have any expectations on what it would be like. But it was great, I feel like it would definitely be able to be developed into something very useful and have a lot of impact on what it is trying to do.

I: Is there anything you expected to see/would like to see that you did not?

VP2: No. just going back to what we were saying, I think it would be a more real-world environment if there was a bit more interaction. I don't know if that would be with a virtual avatar or other people using VR through the internet or something. But if you could actually interact with shop assistants and there were other shoppers around in the environment, I just think it would be a more real-world scenario.

I: So that social aspect is really important for you?

VP2: Yes, definitely.

I: Drawing on the social aspect, would you prefer to be speaking with a real shop assistant on the other end, or friends/family that you could interact with?

VP2: All of the above really. For example, if everyone had their own VR headset and you could invite someone to come virtual shopping with you and you could walk around or teleport around these malls without having to leave your home. So, say me and my friends could go shopping in Dubai mall without having to actually go there.

I: Would you like to be able to make purchases in VR?

VP2: Yes definitely.

I: How about if you could access promotions would that entice you more so?

VP2: Yes, it would just be like a new dimension of online shopping really wouldn't it, but it is more like you are actually going there.

I: Would it entice you to the destination?

VP2: After experiencing this, yes it would.

I: Would you recommend it to friends and family?

VP2: Yes, I definitely would. I think this sort of technology is cutting edge and where the future is heading.

END OF INTERVIEW.

12.8.3 Visitor Interview 3

Date: Mon 13th Aug '18

Location: Manchester City Centre

Length of interview: 13 minutes 45 seconds

Gender: M

Age category: 22-34

Participant No.: VP3

I: How often do you visit cities?

VP3: I would say on average about twice a week. That is a good estimate.

I: What is your main reason for visiting?

VP3: Usually it is to find shops you can't find in the local area as [cities] often do bigger branded shops and to see a little bit more diversity and basically just to get out of your home area and explore.

I: Can you tell me how you usually find a (new) city to visit?

VP3: I think media in the digital age is a pivotal factor in finding new locations. For example, I would have never heard of Barcelona without the use of the internet or had an insight into the culture of the city, which would then make me go and buy a flight and check it out for myself. So social platforms such as Facebook, YouTube, LinkedIn, Instagram, Tumblr, you name it, I've seen it.

I: Have you used VR before?

VP3: No. Virtual Reality? No this will be my first virtual reality experience.

[EXPERIENCES VR]

I: How did you find the overall design?

VP3: The virtual store was organised very well. If it was physically manifested in front of me I would not question it to be a real store. So, the layout of the store was very acceptable, it would not be questionable. I would not be like "who designed this?". It was very realistic and well proportioned.

I: Did you feel comfortable there?

VP3: Yes, I felt comfortable and I could get around the surroundings quite easily. Like I say, everything was to scale and proportionate.

I: How did you find navigating? Could you suggest anything that could make it easier to navigate around the shop?

VP3: So, if I was talking about navigating around the shops, so in certain cities you will have like footprints marked on the floor, or you could have a suggested barrier. So, you could have a barrier around certain bits to navigate you around the shop in a certain manner. That is all I could suggest really. Apart from the obvious which is signs.

I: Did you notice any sounds?

VP3: Yes, there was a nice ambient crowd in the background that you would find in a shopping mall. So ambient shopping mall sound. For example, if you were on editing software and you were making a film, you wouldn't question that that would be the ambient mall sound. That would make the experience a lot more realistic.

I: How immersed did you feel?

VP3: Yes, you have to get used to it. Once you have gravitated to the VR, then you are immersed in the experience and it is a very good simulation of reality.

I: Did you feel present in VR?

VP3: Oh yes. I felt just as present in the VR just as if I was doing high end gaming.

I: How useful did you find it?

VP3: I feel like this could be very useful in the army sector of society, in navigating potential battlefields, navigating terrain, taking it away from the military aspects, underwater exploration. For example, scuba diving, people learning scuba diving, things that are basically, for example, flying a plane, where it is high risk to someone who has got no experience, this is a very good way of giving them an experience as close to reality as you can, without having the physical dangers of actually doing it in real life, in real time.

I: Would you say you were comfortable with how to use it?

VP3: Yes, it was very use friendly. I felt completely at ease with the device. I was having no issues such as migraines and what not, and I think this sort of product could go far in the tech sales industry.

I: Think about when you saw the malls and shopping areas, do you think VR could influence you to shop in a new destination, if you were to see the destination in VR?

VP3: Yes, it could definitely broaden my horizons. For example, just like in real-life if I saw an advert or I drove past a shop that caught my interest, if a shop caught my interest in VR it would then maybe inspire me to go there in real-life. So, as a tool of advertisement I would say that this could be a good product.

I: Is there anything that you expected in the environment, to see, or that could be improved?

VP3: Personally, because I am into nature I would have liked a Desert shot, maybe incorporate drone footage into the VR. If you got drone footage into VR, then I think you are reaching the next sector of where you could go with the product and how you could market it.

I: Is VR something you would use to view a destination prior to visiting?

VP3: Yes, definitely. Especially, although controversially the comment, if it is for example a dangerous area, the VR may be able to give you an insight into whether it is actually dangerous, or whether it is just a rumour. And whether you would feel, as a westerner for example, whether you would be OK going there, and it is like you ordinary shopping mall,

or you would feel very out of place, and in danger so the VR gives you an idea of what it is like. And this goes back to how it could be used for military, or underwater, it is getting that almost first-hand experience, without actually physically doing it.

I: How does VR compare to previous methods you have used to search for a destination (e.g. Social Media)?

VP3: I mean it is just basically taking it from 2D to 3D really isn't it. So, you can look on a website and you have got your 2D pictures, the photographer if he is good might be able to give a few more dimensions to it but really it is not like having a 360 view as if you are there. You are not going to get that on a website really are you.

I: Would you recommend it to others?

VP3: Yes. I think it is definitely something I would recommend to others. For example, if I did find a shop that you know, I would not have normally noticed, I just casually browse in and out of ones I know, and then yeah, the product would be recommended.

I: Any additional comments?

VP3: OK, so additional information on how to improve the product in the tech sales industry, it needs USB ports that can connect [VR] to a projector. Or better still, Bluetooth applications so you can do more stuff. So, it needs a better focal range, it needs ISO capabilities to alter the ISO. We also want to be able to have a recording device, so you can actually record while you're on sight, that can also have a shutter speed application, so you can adjust the shutter speed. It wants 4K capabilities, so it can link to a 4K projector, higher resolution, with HD online port/HD1 port, and all other types of ports so you can do all other stuff. The ability to zoom in. Moving around you could have a lot of additional features with moving around, so you could have like on PlayStation remotes, vibrations to go with sounds. So, if a car goes past, it actually vibrates your temples and your senses more, so you can have more high-quality speakers. I like the idea of focusing in on the areas, but when you have actually focused in and centred yourself in the position and the composition of what you are looking at, and you are directly in line with the arrow, if it could illuminate a colour, or it goes into focus like on a camera when you get it into focus the arrow goes into focus, and you see some engagement of it like going green, or you see a white line going round it and it disappears because you are going in the direction. And then the next thing comes up on where to navigate, like where to look. So, there is little indicators, so in your actual vision, there could be little things that show the battery life of it like in the bottom right corner, very small though so it does not obscure the vision and the experience. Like what you get on an actual phone screen. It was an enjoyed experience and then actually thinking of how to improve it was also enjoyable and making me realise how much I now know about technology and how to actually make a good product that you think would do good in the tech sales industry. I would definitely use the product again. I think the product itself can be worked upon. There probably are products already that are better, there will be better ones out on the market. So that is back to market research. Do your market research, find the best product, with your budget, and do your research and then you know what you are looking for. 4K capability, think that has got to be top of the list hasn't it. Fully immersed.

END OF INTERVIEW.

12.8.4 Visitor Interview 4

Date: Tues 14th Aug '18

Location: Manchester City Centre

Length of interview: 7 minutes 1 second

Gender: M

Age category: 55-64

Participant No.: VP4

I: How often do you visit cities?

VP4: Three times a month.

I: What is your main reason for visiting?

VP4: Shopping.

I: How might you find a city to visit?

VP4: TV ads, papers.

I: Have you used VR before?

VP4: No.

[EXPERIENCES VR]

I: Is there anything that stood out to you, that you particularly enjoyed seeing?

VP4: It was the whole experience on the headset. The destination stood out. I've never been to the destination. I think this would give me a rounded view of it, things I have not seen before.

I: How did you find the design of the application?

VP4: I thought it was good.

I: Is there anything that could be improved?

VP4: Yes, the sharpness because it might be sharp for other people but with my eyesight it wasn't. You should be able to adjust it more to suit your vision.

I: To what extent where you able to move around?

VP4: I thought the first one [360-degree video] was fantastic, it was like being there. The second one was like I was shopping, like viewing a movable catalogue.

I: So, did you prefer more of a passive experience where you were viewing the destination or the interactive?

VP4: The passive.

I: Can you suggest anything that could make it easier to move around?

VP4: It wasn't that bad. If you could zoom into the individual item, you might want to view that would be good.

I: To give you an idea of what you could buy when you get there?

VP4: Yes.

I: What sounds did you hear?

VP4: In the first one, the experience was actually like being there, and you were taken in by the sounds as well as what you saw. The second one, I did not notice any sounds. It was more of a viewing experience, where your searching for something you may need.

I: Did you enjoy the commentary in the first one? What did you enjoy?

VP4: Yes. It was informing you of all the places and what's there. I would prefer to hear the information because it's more helpful.

I: Would you prefer that through the sound or written?

VP4: Through sound. I wouldn't be able to read it.

I: Did you feel you wanted to interact with other people?

VP4: Yes, you sort of did yes.

I: Would that improve your VR experience?

VP4: Yes, it would.

I: Would you prefer to interact with real people (i.e. other VR users/shoppers) or digital assistants (as with online chat help)?

VP4: Digital assistants.

I: Did you feel immersed in the environment? How did you make you feel?

VP4: Yes, I felt immersed. I felt very comfortable with the feeling [of immersion]. It sorts of felt like you were taking part in the experience.

I: How does VR compare to other methods (e.g. TV)?

VP4: Say you are watching on TV, it doesn't have the same effect. You are not taking part with [TV], whereas with VR, you feel like you are taking part in the whole experience.

I: If you were to use VR to view destinations prior to visiting, can you tell me how you might benefit from using it?

VP4: I would definitely use it because it would give you an insight into where you are going and what to do when you get there, and it gives a lot of information.

I: So, more information might motivate you to use it?

VP4: Yes, and perhaps influence your decision on going to some places.

I: Can you suggest how it could be improved/made easier to use?

VP4: Like I said if you could refine the eyesight, because people have different eyesight problems.

I: Can you suggest any way that VR might influence your views of a shopping destination?

VP4: Being able to see it in VR, being able to go close up and inspect the goods, maybe if you could pick up products, have a look at them, and become part of the whole thing. The more you could become part of it, speaking to people and asking questions, handling the merchandise, the better it would be.

I: Is this something you would use in the future to decide on shopping destinations to visit?

VP4: Yes, it is, if it is affordable, and if it improved any more than it has, I think it would catch on and become a good thing.

I: Would you recommend it to others?

VP4: Yes, definitely.

I: Any additional comments?

VP4: I would prefer the application to be included in the headset (rather than inserting the phone) and be able to download other applications (e.g. movies), and also to be able to focus in within the app (did not like using the reel on top of the headset).

VP4: I enjoyed looking down on the experiences (specifically the balcony).

VP4: VR is more trustworthy than just looking at brochures that have photo shopped images. It would be good if you could access a VR live cam of a shopping destination, to check the weather and the atmosphere before you go. Even if your friends and family are on holiday and you could chat with them through the VR headset and see where they are in 360-degree.

VP4: When it gets more advanced it could even include smells, so if someone in VR pushes flowers up to your face and at the same time the smell of flowers is released that would make it more real. Or if you could smell the sea air when the sea comes on, or feel cold when looking at the Arctic, or heat on your face when you see Dubai, then I would feel more present. Temperature controlled isn't it, that would add to the experience.

VP4: You could easily see 18-30 holidays in VR. If the young ones put the headset on and they are in a nightclub that would definitely get them to visit.

END OF INTERVIEW.

12.8.5 Visitor Interview 5

Date: Tues 14th Aug '18

Location: Manchester City Centre

Length of interview: 8 minutes 16 seconds

Gender: M

Age category: 22-34

Participant No.: VP5

I: How often do you visit cities?

VP5: I would say pretty much every day.

I: What is your main reason for visiting?

VP5: My main reason is for work. Outside of work I go once or twice a week, and that would be for social, night out, food, few drinks, shopping.

I: Can you tell me how you usually find a (new) city to visit?

VP5: I would say just word of mouth, or places I already know, in England anyway, I just know all the cities. If I was going internationally, I would just Google, use the internet and read articles on there for recommendations.

I: Have you used VR before?

VP5: Yes, for gaming, PlayStation.

[EXPERIENCES VR]

I: What did you enjoy?

VP5: For me, it felt real but then I looked up at the lights and I could tell the lights weren't real, and also the thermostats. I think it could have been more real. Even the products on the shelves and stuff, it wasn't bad, I just wish I could have seen them closer up and inspect them.

I: How did you find navigating? Could you suggest anything that could make it easier to navigate around the shop?

VP5: I thought moving around it was alright really. It could have been more signposted.

I: Did you notice any sounds?

VP5: I did hear the sound effects and the fireworks a little bit, but I found that when it was showing a lot of water, I couldn't hear many sound effects I could just hear the commentary. I would have preferred more sound effects to make it a bit more real. Louder and clearer sounds would make me feel like I was there more than I did. The traditional music was not bad. But I think still more sound effects.

I: Did you feel you wanted to interact with others in VR?

VP5: Yes, I would have liked to interact a bit more. With virtual assistants not real people. It would be good though if you could speak to someone else in virtual reality, like my mates. If I was to buy something though, I would prefer a virtual assistant to just check out with.

I: How immersed did you feel?

VP5: I was quite immersed in it. But then it was the sound effects for me really that didn't make it feel that real. And I think I have used a better-quality VR in the past, so I am comparing it to that as well. I felt comfortable and alright in there, I didn't experience any discomfort.

I: How useful did you find it? For viewing a destination prior to visiting?

VP5: Yes, I would if that could be a possible thing to do, to see other destinations not just one. With improved graphics and more sound effects it would be good. It has definitely got potential to be used for that purpose. It is just like using the internet isn't it, but on a more immersive scale.

I: Is there anything that would motivate you to use it more than the internet for example?

VP5: Well, I think at the minute I would always just go to the internet because I can't see it as an advantage. The internet is just a lot easier go-to. In years when VR becomes more cost effective and better improved quality, the headset is more lightweight, and I can just slip it on like a sleeping mask, then I would definitely would go to it. But not as it is.

I: If you have not visited a destination and you see the city centre in VR, would that influence you to visit?

VP5: Yes, it would, because you would get a better idea of what it is actually like wouldn't you, in the VR, you would be able to see it a lot better and experience it a bit before you go.

I: Is that something you would like to do?

VP5: Me personally, I would rather just turn up and find my way around, but it would be a really good idea and useful for someone who is scared of going new places and things like that and would rather map something out before they go. But me personally, I would rather just go.

I: Is there anything that you think could be improved? Anything you would like/expect to see in there?

VP5: Interacting with others, rather than being isolated on your own.

I: How does VR compare to previous methods (e.g. websites)?

VP5: It is similar in ways, it is more fun. But at this moment in time I would prefer to use the internet.

I: Would you recommend it to others?

VP5: Yes, I definitely would recommend it to others, because it's something new.

I: Any additional comments?

VP5: I think the headset could be made a lot more comfortable, and the straps more adjustable. For it to be lighter. It was an enjoyable experience though.

END OF INTERVIEW.

12.8.6 Visitor Interview 6

Date: Tues 14th Aug '18

Location: Manchester City Centre

Length of interview: 8 minutes 16 seconds

Gender: M

Age category: 22-34

Participant No.: VP6

I: How often do you visit cities?

VP6: Every day. Outside of work, two or three times per month.

I: What is your main reason for visiting?

VP6: Work. Outside of work for social activities. Meeting up with friends, food, drinks, shopping.

I: Can you tell me how you usually find a (new) city to visit?

VP6: Google, maybe Instagram, to see what activities and stuff I can do when I get out there.

I: Have you used VR before?

VP6: Never.

[EXPERIENCES VR]

I: What did you enjoy?

VP6: I enjoyed the whole immersiveness of it. I fully thought I was there.

I: How did you find the design? How real did it feel?

VP6: Yes, I totally felt like it was real. It almost felt as if I was in a shop in Manchester, in the Body Shop. It felt like the layout was all the same.

I: How did you find navigating? Could you suggest anything that could make it easier to navigate around the shop?

VP6: Yes, I suppose the mechanics of it was pretty straightforward. I felt like it was user-friendly. You can just look at the arrows and see where to go. I found that experience quite easy to use.

I: Did you notice any sounds?

VP6: Yes, it was just a nice running commentary of what you are actually seeing and what is there. I did find that useful. I kind of like the traditional music. It gave me a feeling like I was in that environment, in that country.

I: Did you feel you wanted to interact with others in VR?

VP6: Yes, well definitely looking around it actually felt like people were looking at you. It almost felt like you could interact with the people in the video. [interacting with people] would be a good element to it. Especially in the Body Shop maybe have a shop assistant coming up to you or something like that. It would be more like the real-world atmosphere.

I: How immersed did you feel?

VP6: It was so immersive that it almost made me feel nauseous. I think at first, I was comfortable with it, until certain points where you are either high up. I think at one point you are at the top of the Burj Khalifa looking down and that was quite a nauseous feeling.

I: Did you feel present in the virtual environment?

VP6: Yes, definitely.

I: How does VR compare to traditional methods?

VP6: Yes, I would say the experience is a lot more like it felt a lot more real. Say if I was doing research into the place I would kind of like them VR tours to try because it gives you a better feeling of the environment.

I: How useful did you find it? For viewing a destination prior to visiting?

VP6: I definitely feel its beneficial instead of just looking at pictures online. You get a fully immersive feeling from it, so it is definitely a good way to go.

I: Is there anything that would motivate you to use it more than the TV/internet for example?

VP6: I am an avid gamer, so I would probably use it for gaming and stuff like that.

I: Can you suggest how VR might influence your views of a shopping destination?

VP6: I think if a new shop is opening and they give out this experience to new customers who already know the layout of the shopping centre and things like that, so they actually know where to go and the products they actually want, I think that's quite a good idea.

I: Is there anything that you think could be improved? Anything you would like/expect to see in there?

VP6: I think the whole experience was good in general sense. I think at some points for me it was a bit too immersive and made me feel a bit nauseous so the whole experience in my opinion was a bit too much. But I can definitely see why this experience can add value to destinations.

I: How does VR compare to previous methods (e.g. websites)?

VP6: I think it is like, far beyond the experiences I have had when researching into destinations and stuff like that. It is a new thing.

I: Would you recommend it to others?

VP6: I would recommend it yes.

END OF INTERVIEW.

12.8.7 Visitor Interview 7

Date: Weds 15th Aug '18

Location: Manchester City Centre

Length of interview: 7 minutes 1 second

Gender: F

Age category: 22-34

Participant No.: VP7

I: How often do you visit cities for leisure activities?

VP7: About once a month.

I: Can you tell me how you might find a new city to visit, for shopping, or going out for food and drinks?

VP7: Daunting. I usually struggle to find my way around.

I: Do you usually look online or use your mobile or watch TV?

VP7: I prefer online shopping, usually on my phone or laptop.

I: Have you used VR before?

VP7: No, this the first time.

[EXPERIENCES VR]

I: Can you tell me what you liked about the experience? Anything you enjoyed seeing?

VP7: I felt like the first one was a bit more realistic. I enjoyed seeing the fountain because it felt really real. Whereas the other one was kind of like you are looking on Google Maps.

I: So, you enjoyed seeing the different attractions and things?

VP7: Yes.

I: When you consider the second one, how realistic did that feel?

VP7: Not really. It was kind of like being on a computer screen.

I: Did you find the design and the layout the store in comparable to real stores?

VP7: Yes, it was very similar.

I: To what extent were you able to move around the store?

VP7: I still felt like it was a bit robotic.

I: So maybe it would be better if you could walk through as you do in real life?

P7: Yes.

I: Can you suggest anything that would make it easier to move around?

VP7: Erm…I don't know.

I: So, you thought it was fine how it is, just a bit more natural movement?

VP7: Yes. Rather than float in to where I look to.

I: Can you tell me what sounds you heard?

VP7: I like the natural sounds of like the water and stuff in the first video. In the other one I thought it was overpowered by the music that was being played.

I: How did you find the commentary?

VP7: Yes, I enjoyed that because I wouldn't have known what each thing was if that wasn't there.

I: So, because of the destination, have you visited there before?

VP7: No, never.

I: So, the destination you have never visited you find it useful for that?

VP7: Yes, definitely.

I: What extent did you feel social in the virtual environment? So, you mentioned earlier you felt like the people were looking at you on the boat?

VP7: Yes, it felt real. You felt involved.

I: Did you enjoy that (feeling involved)?

VP7: Yes.

I: Would you prefer more interaction?

VP7: No, I think that was enough. If someone came up to me I would be a bit freaked out [laughs].

I: A few people have said that, like being involuntarily spoken to might throw you off a bit.

VP7: Yes, definitely.

I: How would you feel for example, if you could share the experience with someone you going travelling with and you could have the experience together?

VP7: Yes, that would be a good idea because you would be able to share it.

I: Yes, so you can share the experience and its less of an isolated experience.

VP7: Yes.

I: Can you tell me how present you felt? So how much did you feel like you were in the destination?

VP7: With the first one I felt definitely like I was there. It was so real. It felt like people were looking at you and kind of like acknowledging your presence. But with the other one, no. It just felt like I was looking at a computer screen.

I: Did you still feel like you were here in the real world or did you feel completely immersed in the virtual world?

VP7: I felt like I was completely gone with the first one.

I: How useful did you find it? Say if you were considering visiting Dubai, would you find this more useful than say, looking online or looking through a brochure?

VP7: Yes, definitely.

I: How might you benefit from using it over other methods?

VP7: Because she kind of talked you through the different locations that you were seeing. Whereas you kind of get lost in it [the information] when it's on a computer screen. Like you are flicking from one page to the other, whereas [in VR], you are acknowledging what she was talking about because you felt like you were in it and you were doing it at the time.

I: Yes, because there is so much information online isn't there, so you prefer having the specific information provided?

VP7: Yes.

I: Can you suggest anything that would motivate you to use it over for example, looking online? Maybe if you could access offers…

VP7: Yes, yes if you could get discounts and stuff then you would probably switch to that. That would be good yes.

I: How easy did you find using it, the headset and the application?

VP7: Yes, fairly easy.

I: Can you suggest how it could be improved? So, you mentioned like you were seeing double vision at the start?

VP7: Oh yes, the focus. If it could automatically focus rather than you just doing it that would be a good help.

I: Yes, because other people have had trouble focusing in…Can you suggest how it could influence your views of a shopping destination? So, did you have any prior expectations of what Dubai was like and maybe seeing it in VR changed that?

VP7: Erm, yes. It seemed like there was a lot more going on than I would have presumed and more than I probably would have found on the internet. Like I probably wouldn't have found any of that [information]. Whereas it was all just there straight away.

I: Yes, and again you get lost in for example, forums online don't you…

VP7: Yes, people's opinions and stuff like that.

I: So, is VR something you would use to view a destination before visiting?

VP7: Yes, definitely.

I: What is your main reason for this?

VP7: Just because I feel like I gained more information from that little video there. I felt like I was experiencing it for myself rather than reading other people's views on like a flat screen.

I: Yes, so getting a more realistic sense of what it is like…

VP7: Yes, like the music and the sounds and stuff.

I: Would you recommend it to others?

VP7: Yes, definitely.

I: What is your main reason?

VP7: It's a new experience isn't it. And it's a lot better than just sitting there.

I: Can you tell me any feelings or emotions you experienced? Did using VR make you feel an emotional connection towards the destination?

VP7: Oh yes, I enjoyed it. You felt like you were included in it. I can imagine older people might be a bit jumpy [laughs].

I: With regards to the shopping areas, did you notice any different types of shopping areas? For example, there was the malls, the markets…or did that not stand out…

VP7: Oh yes. Oh, it did stand out because of the sounds and stuff.

I: Great, I think we have covered everything. Thank you.

END OF INTEVIEW.

12.8.8 Visitor Interview 8

Date: Weds 15th Aug '18

Location: Manchester City Centre

Length of interview:

Gender: M

Age category: 35-44

Participant No.: P8

I: How often do you visit cities for leisure activities

VP8: Twice a week.

I: Can you tell me how you might find a new city to visit, for shopping, or going out for food and drinks?

VP8: Usually either social media or friends.

I: Have you used VR before?

VP8: Yes.

I: Can you tell me what you have used?

VP8: PSVR and HTC Vive. Generally, for gaming applications.

[EXPERIENCES VR]

I: Can you tell me what you liked about the experience? Anything you enjoyed seeing?

VP8: It was sort of like a new, a completely new dynamic in the sense of, I felt I was fully there, and I could see things 360 rather than looking at a 2D still image. I felt like I could get a lot from it.

I: Did you enjoy seeing the different attractions and various areas of Dubai?

VP8: Yes, I enjoyed seeing the attractions from a different perspective in the first one. I felt like I was semi there.

I: Thinking back to the second application, how real did that feel?

VP8: I mean, it did feel real but not as much as the first one…it could have been more realistic.

I: How did you find the store layout etc. compared with real stores?

VP8: The store didn't feel real, it felt very computerised, but in terms of actually using VR as a medium to sell products from the Body Shop in a virtual sense of online shopping, I think it's a very good and new way, an effective way, of digitally selling stuff.

I: How did you find the navigation through the store, so using your eyes to navigate?

VP8: I thought it was a good way of selecting things…you could easily see the dot, but it wasn't too much in that it didn't obstruct your vision…so yes, I think it's a good method of selecting things.

I: Can you suggest anything that would make it easier to move around?

VP8: Not really. Unless you had like a control pad like the PSVR or something.

I: Can you tell me what sounds you heard during the two experiences?

VP8: I thought it was nice when I heard traditional sounds of the area like in Dubai I thought that was quite good and quite relevant.

I: Relevant to the destination?

VP8: Yes…and sort of sounds of the ocean and people in the background giving it a bit of atmosphere…that definitely adds to the immersiveness of it all.

I: How did you find the commentary on the first application?

VP8: I thought it was good and helped the whole experience. I felt like I was being guided around the place as opposed to just aimlessly being there.

I: Have you visited Dubai before?

VP8: No, I haven't.

I: Given that it's a destination you have never visited, did you find it useful to find more information through VR?

VP8: Yes, it definitely sort of enticed me to go there more so after seeing it in VR.

I: To what extent did you feel the VR applications created a social environment?

VP8: I don't think it was very social because there wasn't anyone there or anyone interacting with you.

I: In the first one or the second or both?

VP8: Both of them. It would sort of be good if you could interact with people in VR because then it would be like going on holiday with your mates or something.

I: You would like to share the experience with friends, how about speaking with local people or virtual employees within a store, for example?

VP8: Yes, that would be interesting. So how would that work? Would the employees have a headset on or would they be like an AI or avatar or something?

I: Potentially one step further from for example, a virtual agent when shopping online…a live chat for example.

VP8: Yes, I think that would be good. You could sort of programme some things like have an algorithm behind it. People who are not real but can answer questions.

I: To what extent did you feel like you were at the destination or in the shop?

VP8: It definitely felt like I was in a store it didn't feel like I was in a real store.

I: How about at the destination?

VP8: Yes, I'd say that felt more real because it was actual real footage of the destination, instead of being computer generated.

I: Did you still feel like you were here in the real world or did you feel completely immersed in the virtual world?

VP8: Yes, I did feel completely immersed in the virtual world through the VR.

I: Was that on both applications?

VP8: Yes.

I: If were considering visiting Dubai for example, how useful would you find these applications to use before visiting?

VP8: Yes, it's definitely a useful tool for getting an immersive feel for the place before actually having to go there. I think the more advanced VR gets, the more informative it will be. Like the ability of being able to be virtually somewhere without having to be physically there has got so many positive implications or potential. It will be a very useful tool in the future.

I: Can you suggest anything that would motivate you to use it over for example, looking online for destinations or shopping?

VP8: I think the main thing that would make me use it more is it becoming more real and being able to interact more with the store and potentially walk around more of it and actually see clothes on rails and stuff as opposed to seeing it just in front of you. More products available and just more instructiveness. I think it would be a good way to sort of connect people because people do like to go shopping.

I: How easy did you find using the headsets and the application?

VP8: Yes, very easy.

I: Overall, VR something you would use to view a destination before visiting and what is your main reason for this?

VP8: Yes, because I think it sort of brings a new dimension to the visual aids of showing you a place.

I: Would you use it for shopping and why?

VP8: Yes, I mean the main reason would probably be the novelty of it and it's a bit more entertaining that just shopping online. It adds a new sort of dimension to shopping online and from seeing still images.

I: Would you recommend it to others and why?

VP8: Yes, I would recommend it to others just to see what they thought about it. I don't think it would be for everyone, but it would be good to see people's reactions.

I: Perfect, thanks for your time.

END OF INTEVIEW.

12.8.9 Visitor Interview 9 and 10

Date: Thurs 16th Aug '18

Location: Manchester City Centre

Length of interview: 14 minutes 56 seconds

Gender: 2 x F

Age category: 22-34

Participant No.: VP9 and VP10

I: How often do you visit cities for leisure?

VP9: About 7 times a year.

I: Does that include visiting Manchester?

VP9: Oh well like 20 times a year.

VP10: Yes, I go quite often.

I: What are the main activities you take part in when you are there?

VP10: Shopping, drinks and food.

VP9: Shopping. But drinks and food mainly because shopping you do most of it online.

I: How do you usually find a new shopping destination to go to?

VP9: The internet, google. Like TripAdvisor.

VP10: Yes, research online. Word-of-mouth.

VP9: Yes.

I: Have you used VR before?

VP10: Yes, a purchased one. A purchased game as an app.

VP9: No *(after the interview P9 mentioned using VR at Alton Towers).*

I: Do you know which headset it was?

VP10: The same as yours.

[EXPERIENCES VR]

I: Can you tell me anything that enjoyed seeing?

VP9: I liked seeing the attractions like when we went to Thailand.

VP10: In the VR?

I: Yes, in the VR.

VP9: Oh [laughs]. I thought we was on about cities again. Sorry what did we enjoy most in the VR?

I: Yes.

VP10: Seeing it as if you were there.

VP9: Seeing what you could go and see. Like a little glimpse of what you would experience if you went there.

I: So, giving you an insight into what the destination offers?

VP9: Yes. The most beautiful parts of it isn't it really that it shows you.

I: How did you find the design of the applications? Did you notice the second experience was a computer simulated environment?

VP9: Yes.

I: Did you prefer that, or did you prefer the real footage as in the 360-degree video?

VP10: I think that maybe the real footage is more realistic because you actually feel like you are there.

VP9: Yes of course.

VP10: But to be honest the graphics of the simulation one was, yes, you wouldn't necessarily be able to tell… [that it is computerised].

I: Did you hear any sounds?

VP9: Just the person talking.

I: How did you find that? Would you prefer that, or would you prefer music?

VP9: Music. Because I didn't even listen.

VP10: I did listen to it, so to know where I was and facts behind it as well. Especially with the Mosque it said something about how it used to be a school and then it turned into a mosque and I was like 'woah' so being quite factual.

VP9: I didn't listen to it, so I didn't know it was facts [laughs]. I don't know what she was saying.

I: So, you would prefer music?

VP9: I am more of a visual person, yes.

I: You both mentioned people looking at you when you were experiencing VR, did you enjoy that, would you want to interact more? For example, speak to other people in VR, or speak to digital avatar?

VP9: Yes, that would be cool. Because I was like going to fully engage with these people even though I knew that I couldn't. That would be pretty cool.

VP10: Yes, I agree that would be very cool. It would make it more realistic wouldn't it as well.

I: So, you [P10] mentioned you was very immersed in the virtual world, did you feel the same [P9] or did you still feel present in the real world?

VP9: Yes, I was fully into it.

I: How useful did you find it? Say if you were thinking about going to Dubai, and you were debating between Dubai and Barcelona, how useful would you find it to view the destinations and compare it?

VP9: It's a much better method of comparing destinations.

VP10: I thought it was good. I think maybe if you had erm…like control over what destinations you viewed you know, whether you are able to I am not sure, but that would be useful because obviously you have certain places that you would want to see.

VP9: Yes, like if you were reading out of a book you would bookmark different places wouldn't you.

VP10: Yes [agrees].

I: So, you think it would be better if you had more variety in the application to view destinations of your choice?

VP9: Yes, definitely, 100%. I thought that's what eventually it was going to be.

VP10: Yes.

I: If you scroll through YouTube there is other videos such as New York, San Francisco, so maybe the ability to do something similar?

VP9: Yes.

VP10: Yes.

I: Can you suggest anything that would motivate you to use it? Perhaps if you could access offers or purchase tickets to attractions?

VP9: Oh yes that would be good! If you see something that looks really cool and you are like "I want to go there", and if it gives you the option to buy a ticket.

VP10: Maybe if like travel companies used it, so to say if you were exploring different places to go and they gave you it as an option to kind of view places that would encourage you to use it.

VP9: Yes, and that means for travel agents, more people would frequent them because it's all online now isn't it. But if you had the chance to do this [VR] then more and more people would go into the shop.

VP10: Yes.

I: Yes, because travel agents are not as popular today as they once were.

VP10: Yes, exactly.

VP9: You could even have like pop-up stalls around, like in marketplaces or in shops or pop-up shops just to test it out and see people think.

I: Yes, so in collaboration with Thomas Cook?

VP9: Yes, exactly.

VP10: Yes, yes.

I: How comfortable were you with how to use the headset? Can you suggest anything that would make it easier to use? I know P10, you mentioned the graphics?

P10: Yes, that would be one point. But I don't know if that was the video because previously when using it [Samsung Garr] it was absolutely top notch from what I can remember.

I: Yes, I think the quality of the YouTube video is not all there yet.

VP10: Yes.

VP9: Yes. So, would this be erm…would you make your own video to test out on people? Like you know you are giving them a headset to see a destination, are you going to make a video for them to see instead of using YouTube video?

I: Yes, so it would be companies developing VR applications, but at the moment there is limited research behind it supporting that companies and

destinations can benefit from it, in the way of people visiting and making profit, or in the way of tourism, increasing visitor number, boosting the economy etc. Therefore, companies are hesitant to develop and implement VR at the moment because there is limited proof. So, these YouTube videos are being used to test first or prototypes…

VP9: Well these YouTube videos you cannot really walk around, though can you?

I: Walk around within the headset or physically walk?

VP9: Physically walk.

I: That is because of health and safety.

VP9: Oh right…so you cannot be in a confined area?

VP10: But you might walk into the wall.

VP9: I want to walk around in the thing [VR] so how would you do that if you were sat down?

I: Well, that would be like the second one that I showed you, how you focus on the arrows, and you teleport through, whereas when you compare that to you natural environment and your natural movement, it is not very realistic, so then it is about getting that movement to be more realistic as you are a person in VR and walking through the store, so it is comparable to your real world experience.

VP9: Yes.

VP10: Yes.

I: Is that something you would enjoy being able to walk through it?

VP9: Yes, being able to walk around, look around. But then again it defeats the purpose of then going to the destination if you can look at every single little thing in there [VR]. You need just a taster.

I: Yes, exactly, Just little snippets of the highlights.

VP9: Yes, exactly. Otherwise, people just wouldn't take the headsets off.

VP10: Yes.

I: Because you mentioned the markets [P9] is that something you enjoyed seeing the variety of shopping areas from the mall to the more traditional markets?

VP10: Yes, the diversity.

VP9: Yes, because you go to some places where you don't just want to look at shopping malls because you can get that everywhere can't you? You would want to look at more local things, get a wide range of what it actually has to offer.

I: Yes, especially a destination like Dubai where they have the Souks, the Gold Souk and the Spice Souk, Souk meaning market.

VP9: Yes, it did look pretty cool, I want to go.

VP10: There you go, to conclude [laughs].

I: Can you suggest how it could influence or change your views of a destination? For example, did you have any previous expectations or images in your head of what Dubai would be like and was it different to what you expected?

VP10: Definitely. When you think of Dubai I expected it to be simplistic almost, and not very much character because it is like really well-built and modern. But then seeing the local markets and things you see obviously a different side of it that I wouldn't have envisioned before.

VP9: Yes, it was. It was different. I agree with everything she just said.

I: Yes, because when I went to Dubai I was thinking what I wear etc.

VP9: That's another massive thing isn't it because before you go away you have to think what suitable attire is. If we had this before we went to Thailand we realised that we needed to have cover up stuff, do you know what I mean?

VP10: Yes, which we were quite naïve to wasn't we?

VP9: Yes, and then we had to buy things while we were out there, which is a pain, so yes definitely it is good in that sense.

I: Can you suggest any ways that it could be improved in terms of the content? Is there anything you would like to see in the VR if you were using it to view a shopping destination prior to visiting?

VP9: Well, if you were getting a hotel wouldn't you want to look at the hotel? Like that's what you look for…

VP10: Yes, or the options of hotels…

VP9: Yes, that's also a good one because that's the main thing you are getting when you go out there, and then you've got the tourist attractions haven't you.

VP10: Yes [agrees].

I: Is VR something you would use to view a destination prior to visiting?

VP9: Yes, 100%.

VP10: Yes, yes. The only thing is, does it almost not take you away from the experience a little bit for when you get there? You know because you are sort of seeing it right in front of you. Obviously, it will be very different when you get there, and you are experiencing it properly, but it would take a little bit of a it away, because you see the hustle and bustle of somewhere.

VP9: But also, I think it would be less of a shock when you go there as well because you won't feel so out of your element. Because that is one of the scary things about going away especially to long-haul places like Dubai and stuff like that. You would want, I think I would want to see what it's like, so I don't feel out of my depth.

I: How does VR compare to previous methods, so you mentioned looking online, using your phone?

VP9: And looking in a book, yes. It is much much better in that sense. If it had all the things online has to offer like erm, looking around places, different hotels etc. then it would be ten million times better and it would be your main go-to thing of looking at holiday destinations. It would be mine if it had all that.

I: So, the limitation is that online you can look at anything you want [unlimited content] but in VR you are seeing what there is created at this time [i.e. select content/VR videos]?

VP10: Yes, it is restricting.

VP9: And also, with this, you haven't just got it like here [the VR headset at home]. What if you did have it? What if you owned one, like a headset, could you then like download, or what if it was an app right, could you download the app, which then showed you all the stuff and you just somehow connect it to your headset like a game but it's not, would you do that? So, then you can have it at home. Because everyone is going to have a headset eventually I think.

I: Yes, exactly. Let's say Thomas Cook put the contents of their website into a headset and you could browse everything in VR at home like you can online?

VP9: Exactly. That would be so good. That would be my choice, you wouldn't even look at your phone then would you.

I: That is a barrier at the minute, that not everyone has a headset, so companies are relying on people to have them. Because destination and retail marketers don't have a place to host the experience so that is a limitation for them at the moment.

VP9: Yes, but you have also got to think this is going to take a while to develop and also so is, people are going to develop within technology just as slowly [technology adoption], do you know what I mean? That's why I think pop-up shops would be a good idea to get the word out. It would also make people think "oh, I need a headset because I can just do this in my own home". So, you are then selling headsets.

I: Would you recommend it to others?

VP9: Yes.

VP10: Yes.

I: And for the reasons we have just discussed?

VP9: Yes.

VP10: Yes.

END OF INTERVIEW.

12.8.10 Visitor Interview 11 and 12

Date: Thurs 16th Aug '18

Location: Manchester City Centre

Length of interview: 16 minutes 40 seconds

Gender: M and F

Age category: F 18-21 (P11), M 22-34 (P12)

Participant No.: VP11 and VP12

I: My first question is how often do you visit cities for leisure?

VP12: Erm…not often only when I go shopping or I go out for drinks in Manchester.

VP11: I would say every few weeks. Just got like, little trips out.

I: What do you normally do when you are there, is it just for shopping or visiting friends and family?

VP11: Usually shopping, go for lunch, stuff like that, have a wander round.

VP12: Yes, shopping, food, drinking.

I: Perfect. How do you usually find a city to visit, do you tend to look online, social media, and things like that?

VP12: Word of mouth, then follow up by research on the internet.

VP11: Erm, word of mouth and then I usually see what's there when I get there.

I: Have you used VR before?

VP11: Never.

VP12: Erm, I have not no.

[EXPERIENCES VR]

I: When you consider both the experiences, can you tell me anything that you enjoyed or anything that stood out to you that you particularly enjoyed seeing?

VP11: I liked having the person in the background telling me what's what and what I am looking at because I wouldn't have a clue otherwise.

I: That's good. Did you feel that informed you more about the destination?

VP11: Yes. It's quite nice when you are on the beaches and stuff to have music because you are on the beach. But when you're in the markets and the malls and stuff it's nice to have someone explaining where you are and what's there.

I: Yes, especially if you have never been that can be quite good.

VP11: Yes.

VP12: I also enjoyed that, but I thought you should have had the natural sounds of what is going on there as well. I mean you could have done, but I could not hear it.

I: Yes, so for example there is a waterfall, but you cannot hear the sounds of the water and fireworks.

VP12: Yes.

VP11: Yes.

VP12: The quality as well. I couldn't work out the focus thing.

I: So that is something that needs improving?

VP12: Yes.

I: How did you find the design of the store, so moving through it? You know how you focus on the arrows and you move into the store, did you find that easy or can you suggest anything that could make it easier?

VP12: Yes, I thought it was pretty easy. Erm…the graphics in the shop were good enough, highly believable.

VP11: Yes.

VP12: Erm, yes. Pretty cool.

I: Of the two experiences, which did you prefer, the more passive experience or the more interactive experience?

VP11: Yes, I preferred the one where you were sort of stood there and you look around, you are in your own bubble. You feel like you are there, but it still leaves stuff to the imagination for when you get there.

I: Yes, so you enjoyed having the snippets?

VP11: Yes, I liked having just a taster of it and then, yes.

VP12: I did like it. Erm…but I wouldn't use it to go and look around the destination of a holiday destination that I want to go. I would use it to go shopping and to see if they had the stuff that I wanted, or to have a glance in the shop before. But I wouldn't use it if I was going looking for somewhere to go only holiday because I wouldn't want it to ruin it. Because I want the full surprise experience when I get there, rather than feeling like I have been there already, but I have not been there. Do you know what I mean?

I: Yes. For example, the second experience where you can actually go into the mall and have a look around and see if it has the shops that you want, that would be more suitable for you?

VP12: Yes. That would be more suitable to me yes.

I: To what extent would you like to buy something or access promotions?

VP12: So, what you are saying is would I be able to buy something via the headset?

I: Yes, would you like to be able to, or say if you viewed it in the headset and while you were using it you got some promotions like 20% off if you go shopping there when you arrive?

VP12: That would motivate me to go there. But I am not sure I would start buying clothes over it. I don't know I might do it is just hard with clothes, isn't it?

VP11: It depends because when you say you can buy it in the headset, would it be like you go into the store in the headset and then you can pick it up and pay for it there [at the destination], or would it be a link to the store or the website?

VP12: Would you get the full shopping experience?

I: Yes, like would you be able to try it on, no.

VP12: Yes.

VP11: Yes, but say if it was like say some face cream, would you be able to go to the counter in the headset and pay for it? Or would you be able to like browse [in VR] and then it sends you to the website or something?

I: Yes, that is a good idea actually because then you are on the website and you are browsing through it. I suppose that's the difficulty because if you were buying something from your local city you might do it, like you buy online and go and pick up in store…

VP11: Yes, saves you the trip…

I: …but I guess if you are going on holiday it is a bigger ask to actually pre-order something.

VP12: Plus, if you are going down that route like picking stuff up, you would have to get them interactive gloves, wouldn't you? And then if you are looking at putting this stuff into the household then you are going into expensive stuff really aren't you, to get the full kit just to view something in VR that you can view online for free. Well, it's not for free because you would have to buy the laptop, but the laptop has other uses doesn't it. So, you would have to justify it by having loads of other uses for your interactive gloves and your goggles other than previewing clothes and having that shopping experience. It wouldn't be a necessity in every household, it would only be in a select privileged few.

I: Yes, so perhaps gamers?

VP12: Yes.

P11: It would be good at like, are they called travel agents? It would be good at places like that.

I: Yes, because if you go into the travel agents and experience the destination in VR you could be more likely to buy it because you have seen it more than looking through a brochure at 2D images.

VP12: Yes.

VP11: Yes.

I: Going back to what you were saying P12, that is a barrier at the moment, not everyone has a VR headset, so how can people use it at home when not everyone has got one? And the technology isn't there yet, so people don't want to fork out the money for it because it might not be good enough quality for some people to spend hundreds of pounds on it, unless you are a gamer…

VP12: Yes, it is not fool proof yet.

I: Exactly. A lot of research we do is finding the usefulness of it beyond it being a novel thing. When you consider the sounds, P11 you mentioned the commentary, P12 you mentioned natural sounds, can you suggest anything else, how about music?

VP11: I think natural sounds as well.

VP12: Yes, no music. Commentary's cool. Like you said, if you go in a travel agents then pre-recorded commentary throughout it all explaining it would be good, but in between the gaps of it still being silent, get a bit of the natural noises going on in there.

I: Yes, so a bit of a mix [of commentary and natural sounds]?

VP11: Yes.

VP12: Yes.

I: When you consider the other people in the virtual environment, is that something you enjoyed?

VP12: Erm…a bit too many of them were looking at me [laughs]. I get the odd person or the odd guy, but when I am walking down and there is lots of people looking at me and that, somebody who is anxious would find that off putting.

VP11: I quite like it because it gives you an idea, because obviously the malls were busier than the markets or the beaches, it sort of gives you an idea of how busy it does get, and how many people will be there. Because sometimes markets can be absolutely packed, and sometimes there's about two people there. So, it is good to know that way.

I: Yes, and I recently went to Dubai, and what we found is that there is a lot of locals, and with somewhere like Dubai, is that off putting because of the culture? Will you fit in, are you allowed there etc.? That is a very good point. Would you like to interact with them, so speak to them?

VP11: I think no [laughs].

VP12: No, definitely not.

VP11: I think it would stress me out a bit. If someone was talking at me and I didn't know what they were saying.

VP12: No, I cannot be bothered making a conversation with somebody in VR.

VP11: [laughs] they are still real, they are still there, they are not fake [people].

VP12: No, I can't be bothered [laughs].

I: Another advancement might be saying if you had the headset on [P12], and [P11] had one on and you could both interact in the virtual world and you could both be sharing the experience, so say you are both in Dubai, you are both avatars in this environment going through this experience together…

VP11: Right, so can you interact with each other?

I: Yes, possibly…

VP12: Yes, that would be cool.

VP11: Oh, yes that would be quite nice.

VP12: Obviously if you are going with somebody the dual experience would be better for the pair of you because you would be doing it together wouldn't you.

VP11: Yes, and you could sort like point stuff out to each other whilst you are both looking. Because the clips like they move on don't they, you only get a certain second so say if one of you sees something and the other doesn't, because they are looking in the opposite direction…

I: Yes, that is a good point.

VP12: Four eyes are better than two [laughs].

I: Yes, because you could be looking one way [P11] and you [P12] could be looking the other way and missed the top attraction, yes, very good point. So, can you tell me how immersed you felt in the experiences?

VP11: Like 1/10 or?

I: Well, to what extent did you feel like you in the virtual environment or did you still feel present in the real world?

VP11: Still felt present in the real world but…

VP12: I was messing about with the focus too much, but I was there, in mind, not body [laughs].

VP11: Yes, basically, I did feel like I was there as much as you can be when you are not there.

I: Yes, that's good, and did you feel OK with that feeling of being the virtual environment?

VP11: Yes.

VP12: Yes, no issue.

VP11: It was quite nice because if you don't like going these places and if your using this but in your living room, it's also quite nice.

I: Yes, a few people have mentioned dealing with fear of heights, so VR could help to overcome those fears or maybe experience things you might not get to experience in real life.

VP11: Yes, because it did start off at a really high building didn't it and you are looking down.

VP12: Yes.

I: That is a good point actually, did you experience any negative feelings like nauseous or motion sickness?

VP11: See that height thing, that could throw people off because you do look straight down. Literally I was like looking down, I'm alright with heights but that might make you feel a bit off.

VP12: I am not scared of heights. I had the urge to jump off the building [laughs].

VP11: I think there is a point where you are in a boat, and if you are sea sick, someone who gets really bad sea sick, then that might be an issue, but it didn't feel like you are rocking about.

VP12: No, in the boat my body wasn't triggered that badly.

I: Good. How useful did you find it?

VP11: I found it quite useful because I didn't think too much about it, but now knowing there is all the beautiful buildings that you see on the internet, but then there is still the little market streets and markets that you don't get to see because they don't put that on the internet as a thing. But that to me is still appealing.

I: So that is important for you to see the more local shopping areas?

VP11: Yes, not just see like massive flashy malls and stuff, it's nice to see diverse areas.

VP12: Yes, I found it very useful for that also.

I: Can you suggest anything that would motivate you to use it over other methods such as looking on a website?

VP12: Yes, I would do it for shopping…do you know what going in Lush would be good.

VP11: But you wouldn't be able to smell it.

VP12: Oh no you wouldn't.

I: So, you need more multisensory devices for that.

VP11: Maybe stuff like buying houses.

VP12: Yes, that would be good like at an estate agent!

VP11: If you could look around houses.

VP12: Yes, like go around the houses in VR, that would be wicked.

VP11: If you do end up being able to buy stuff I mean supermarkets would be a good one. Stuff like if you were watching a catwalk through it and you could see the shop or buy the clothes from it.

I: Topshop did a VR experience, but you couldn't purchase you could just experience and preview the catwalk show.

VP11: Yes.

VP12: Also, I think it would be good say if you wanted to pick a restaurant, if you could preview the restaurant, and you could preview the menu, have a quick look around before you go in VR…want that seat over there, ring up and book it.

VP11: Also, stuff like theatres. If you wanted to go and see a show and you are wondering what seat to pick…

VP12: Or don't even go to the theatre just watch it in VR [laughs].

VP11: …or if you could then see where is the best view from which seat.

I: Yes, that is a good point because these are experiences that you go there, and you want it to be perfect. So, when you arrive, and it's not lived up to your expectations it can be disappointing.

VP11: Yes exactly, and if you are sat near the toilet [laughs] or so far up that you can only see half the stage.

I: OK my last few questions, can you suggest anything that could make it easier to use or improve it?

VP11: Not really no.

VP12: Other than the focusing, the quality of the video, could get that HD.

I: Yes, so that would improve your experience.

VP11: I wonder if like proper earphones, but then I wonder it that takes it away because you don't naturally walk around with earphones in your head.

VP12: Yes, it would be dependent on the person. Because they still want to have that feeling of actually being in the real world.

I: Yes, like you [P12] was trying to speak to use when you were using it.

VP12: Yes, that's what I mean.

VP11: But if you had some amazing speakers or headphones that sat on your head and made it feel completely real but then it also changes it as well because you would always walk around with headphones on, so it depends on the person.

I: Would you use it to view a city before visiting? You mentioned earlier you would not P8, what is your main reason for that?

VP12: I wouldn't no.

VP11: I would because I would want to see what's there. Rather than getting there and not having a clue where this and that is. Like if you go sort of flea markets, if you saw that, you would then know to go and look for it. Whereas if I just arrived I wouldn't know to go and look for it. Also, if you saw a restaurant and thought that looks amazing or what a beautiful beach we need to go there, then you wouldn't necessarily know [if you hadn't viewed it in VR] do you know what I mean?

I: Yes…would you recommend it to others?

VP12: Yes.

VP11: Yes, definitely.

END OF INTERVIEW.

12.9 Appendix I: Coding Template

12.9.1 Industry Interviews Coding Template

Initial Topics and Codes:

- Perceived benefits associated with immersive technology implementation for:
  - Urban place marketers
  - Visitors to urban shopping destinations
- Perceived barriers associated with immersive technology implementation for:
  - Urban place marketers
  - Visitors to urban shopping destinations
- Perceived organisational capability associated with immersive technology implementation
- Perceived external pressures associated with immersive technology implementation

Initial themes and sub-themes:

- Perceived benefits:
  - Influence perceptions
  - Influence visitor behaviour
  - Increase market demand
  - Increased visitor satisfaction/added value
- Perceived barriers:
  - Visitor acceptance
  - Availability of appropriate hardware/software
- Perceived organisational capability:
  - Perceived costs and access to funding
  - Determining whether investment is worth it
  - Determining whether the organisation has skills/knowledge required to implement immersive technologies
- Perceived external pressures:
  - Competition with other cities

    - Industry acceptance

Final themes and sub-themes:

- Perceived benefits:
    - Enhance destination image
    - Increase visitor number
    - Attract global markets
    - Added value to the visitor experience
- Perceived barriers:
    - Visitor readiness
    - *Technology access**
- Perceived organisational capability:
    - Funding access
    - Return on investment
    - *Organisational readiness**
- Perceived external pressures:
    - Competitive pressures
    - *Industry readiness**
- **New themes matched against literature*

12.9.2 Visitor Interviews Coding Template

Initial Topics and Codes:

Virtual retail environment

- Atmospherics (visuals and sound)
- Design factors
- Social factors (interaction with others)
- Interactivity (with the virtual environment)

Affective/cognitive states

- Positive emotions
- Potential negative emotions
- Change of perceptions attitude (towards VR and places viewed in VR)
- Perceptions (of VR and place viewed in VR)

Usability

- Easy/difficult to use

Behavioural intentions

- Intent to recommend
- Intent to visit places features in VR
- Intent to use VR again
- Intent to purchase

Second phase of review - Themes and sub-themes:

- **Virtual retail environment**
  - Atmospherics
    - Music
    - Commentary
    - Natural sounds
    - Multisensory
    - Impact on presence
    - Additional features/content
    - Graphics/images impact on presence
    - Providing insights into the destination
  - Design factors
    - Interaction with products
    - Interaction with VR environment
    - Perceived ease of layout
    - Difficulty with layout
    - Suggestions to improvement
    - Impact on presence
  - Social factors
    - Prefer to interact with virtual avatar
    - Prefer to interact with friends and family
    - Increased presence
- **Usability**
  - Easy to use
  - Difficult to use
  - Suggestions for improvement
- **Internal response**
  - Emotional response
  - Attitude change
- **Behavioural intentions**
  - Intent to repeat the VR experience
  - Intent to purchase using VR/as a result of using VR
  - Intent to visit places featured in VR
  - Intent to recommend the VR experience to others

Final review. Themes and sub-themes:

- **Virtual retail environment**
  - *Virtual atmospherics**
  - *Virtual aesthetics**
  - Interactivity
  - *Social presence**
  - *Layout design**
  - Usability
- **Internal states**

    - Emotional arousal
    - Attitude
- **Behavioural intentions**
    - Intent to use VR again
    - Intent to visit places featured in VR
    - Intent to recommend VR to others
    - Intent to purchase using VR/post-VR experience
- **New themes matched against literature*

12.10 Appendix J: Thematic Tables

12.10.1 Industry Interview Data

Table 12.5. Thematic Table: Industry interview data

Data extract examples	Initial code	Final sub-theme
• P2: "I would see VR as a good way to promote a city destination for tourism, shopping or whatever, to use that in your home experience, that would maybe form a basis of making your final decision on where you are going to take your next city break or holiday". • P2: "I think AR and VR would attract people here to shop because the sites, the sounds, the whole branding, there is sponsorship potential with advertising. It is a really good way to position products, particularly unique things that certain shopping centres have got, so you can target consumers depending on segmentation". • P3: "Previewing destinations through VR is useful, when they are not actually in the destination. I think it could provide people with a sneak previous of the destination, I do see its potential there. That is a great idea…VR for enticing them here/destination marketing/pre-arrival. I think VR could really motivate them to visit". • P3: "Regarding behaviour, I think it could change their behaviour because if you have had a good experience you are more likely to recommend to friends and family, and you are more likely to go back again. It might be that they spend more time in a place because they thoroughly enjoyed using the AR and VR, that would contribute to them wanting to come back". • P4: "I think VR is useful to create the desire and interest to want to visit if you offer them a snippet of the destination". • P5: "I would hope the AR or VR experience would motivate the tourist to re-visit and if they have downloaded the application it gives us the opportunity to resell them something. For example, we might upsell the Christmas markets to those people to say, 'why not come back'. It gives you a communication channel of continual engagement…I think advertising our use of AR online our website would motivate tourists to visit". • P7: "I think [VR] would create a more seamless experience. From a destination marketing point of view, it would make booking and planning the trip more seamless. I think VR would be more useful in helping people decide on Manchester as a destination".	Perceived benefits for urban place marketers	Positively influence visitors' behavioural intentions
• P2: "AR and VR has the potential to change visitors' perception of Liverpool as a tourist destination, but you cannot beat an actual experience of being here. People have got to come here and experience it in real, feel it, see it. But it will definitely add to the visitor experience". • P3: "I think implementing AR and VR has the power to change the destination image, I think there is such a broad range of visitors to the destination, that it would depend on their preferences e.g. how traditional they are, how tech-savvy they are. It would depend on the individual visitor. I think some people will still want to experience the destination with their own eyes, their own feelings, and then there will be some people that want to experience in some different/new ways". • P4: "People are surprised what Manchester looks like now, so I think to change those misconceptions through VR or AR would be useful. You could show what the city looks like, and get people thinking and change perceptions". • P5: "Implementing AR and VR shows the destination to be more innovative, it might challenge some preconceptions". • P7: "If AR had a social aspect, that would be a good way to get the brand out there because user generated content always works best anyway". • P7: "I think people have a skewed perception of Manchester, they think it is still the industrial city that is was years ago, so I think implementing AR and VR would change people's perceptions because there are some beautiful parts of Manchester and hopefully the technologies would make people realize that. If you could change people's perceptions before they got here and make them consider Manchester as a destination would be a great thing".	Perceived benefits for urban place marketers	Positively influence visitor perceptions
• P1: "As generations are brought up with technology I think there is an expectation that you will be able to do everything from your phone and via an application".	Perceived benefits for	Attract global markets

• P2: “There is a lot of diversity in Liverpool, so we attract a lot of markets. One of my roles is to develop tourism for overseas markets, and they are not that easy to reach sometimes. So, it takes a long time to reach them. Particularly with tour operators that bring large groups here as part of a group tour, it takes several years to actually get them here and to change their plans. So that type (AR/VR) of experience would be really good…it is a low-cost way to get the awareness out there”. • P5: “We just did an AR project that focused on millennials in the US, it was about attracting younger demographic over from America. It was a partnership between Cheshire and other heritage cities across the country including York, Bath, Greenwich, Lancaster, Cambridge, Oxford etc. Generally, we attract older audiences, so it was an attempt to attract a younger demographic”. • P6: “I mean we do get a lot of Chinese and Japanese tourists. The last time I went to Hong Kong going back ten years, their technology was way more advanced than ours. You know, it might just be something that they are used to. I mean, it depends how useful it is. If it saves people time, saves them effort, and it’s useful, generally I think people will buy into it”. • P7: “It is important to for shopping centres and destinations to use innovative technologies in the tourism offer specially to attract international markets…GCC market and the Chinese market are very tech savvy, so we are trying to look at other ways to attract visitors aside from social media and websites”.	urban place marketers	
• P1: “I can see that AR would be useful there, such as a walking tour or an application…from the historic perspective, there would be loads to talk about there, but what you can see now is a very modern city landscape, so I could see AR working in that way”. • P2: “It is all about adding value to the visitor experience, I think AR and VR would enable them to make the most of their time whilst they are in the city, so they don’t miss things that might have been of interest to them. Also, if there is something they can take away with them, to create memories, and sharing them via social media, that is undoubtedly a great way to get our brand out there. It works both ways – it can work as a negative as well, but generally it is really good”. • P3: “It would be interesting to assess the impact of the AR application that we have just tested. I think there is big potential for it, and it will bring the destination to life. I think just from friends and family that have been to the destination and used AR, they have really enjoyed it and shared their experiences on social media, and it has been a fun thing for them to do, so I think it has got potential…I think AR would be most useful for post-arrival/when they are here”. • P4: “I think AR more than VR could change visitor satisfaction because that focuses on enhancing the experience once they are here”. • P5: “I hope AR and VR could be something that would make the visitor feel they have had a unique experience, that they are getting something that not everyone is getting, that they know more than they knew before about the place”. • P5: “I think most important is the content and giving something more about a place that helps people feel like they have had a more complete or special experience so that they feel more fulfilled and satisfied by your destination”. • P7: “AR when they are here to enhance the experience…it would change the visitor satisfaction and improve their experience”.	Perceived benefits for visitors	Added value to the visitor experience
• P2: “I think with VR it is the usability that people may not like” • P3: “Other challenges for implementation aside from cost are general awareness about AR and VR. It needs to be made as easy as possible for people to use and understand. I see that as a massive challenge. It needs to be quite clear on what the AR/VR is trying to do. The barrier is awareness and getting people to use the application once it is available”. • P5: “I think technology as it is evolving, and the cost are the major challenges”. • P7: “We are relying on the visitor to have the quality equipment. Maybe in a few years every household will have a VR headset so then it would be easier to reach them through VR and attract them to the destination”.	Perceived barriers for urban place marketers	Technology access
• P2: “Another challenge is getting people to use the application. I guess that is going to be a generational issue”. • P5: “Things like people’s phones being old or out of date, and not having the ability to use the application well…they also rely on being housed within an application, and peoples phone capacities may limit this”. • P6: “Taking the user along with you because if it’s something that’s completely new, I mean I don’t know of any place where it’s happening at the moment, do correct me if I’m wrong, but I think every time something new comes out, people generally don’t like change so it’s taking them along on that change journey and re-educating them on how to use something like that”. • P7: “Whether people have VR headsets or the technology to use the headset. We would have to trust that our audience have the facilities to use it”.	Perceived barriers for urban place marketers	Visitor readiness

• P7: “I think with AR, as it is mobile enabled it would be more attractive for user acceptance. The airport is considering implementing AR, they are using Beacon technology”.		
• P1: “I don’t think VR is a deal breaker at this point I don’t think visitor expectations are there yet. We don’t feel like we are missing out as a city because we don’t have lots of AR and VR experiences, but that might be different in ten years’ time”. • P2: “There aren’t any AR or VR applications being used around the city but there are mobile applications. It is an area that we have been looking at. It is something that needs a lot of investment and time because it is a big project and at the moment I think as with many tourist destinations, that money isn’t there to fund something like that. It might be something we may look at as part of a collaboration between different partners in the city - that is how we fund a lot of activity now, by working together. Mobile applications are the most innovative technology being used at the moment”. • P2: “I think AR and VR will be the same as mobile phones, they will become widespread overtime once people accept them… it is probably going to become the norm sooner or later, but there is a lot of work that needs to be done”. • P4: “I think the more easily accessible and cheaper VR becomes the more people will accept and use, therefore, I think general acceptance will come in the future, in a few years”. • P5: “For shopping purposes, I think over time destinations will adopt the technologies but at the moment it is still early days. I think there will be a lot of trial and error over the next few years. Even with what we did it is not 100% and we would want to refine it further, and we are applying for some funding so hopefully we will be able to do that over the next couple of years”. • P5: “Also, at the moment, the provision of WIFI is pretty bad in the cities. Often in Chester you don’t get 3G so if you wanted to download something on the go it would be quite difficult to do so”. • P7: “I see potential for it definitely, whether that it is in two years or four years, the time will definitely come…VR faces more barriers but will be useful in the future”. • P7: “We are looking at innovative ways to use applications and WeChat, and VR for one of the campaigns…with the millennial crowd, snapchat is huge for them, but that is hard to implement as a destination, so technologies such as AR and VR are the way forward to connect with the millennials”.	Perceived external pressures	Industry readiness
• P1: “If we are putting on something that other cities are doing, why would people come to Manchester to do it? We would have to use technology to enhance our unique offerings so make it different”. • P2: “Going forward, if we are to remain and develop as a top Europe city break destination then we need to look at all the new technology, but it is coordinating it and funding it”. • P2: “I think implementing AR and VR would give Liverpool a competitive edge because we have always got to be thinking about the next generation of tourists and I have often heard that the Beatles will die out and the youngsters will not be interested one day, but they are. Particularly with John Lennon etc., using the technologies would be really important to link that history to the millennials, the newer generation, and develop that hunger for people to come here. I think different cities would have a different type of experience AR and VR…we have got a lot to offer that could incorporate into AR and VR, so it would definitely help to create a competitive advantage”. • P2: “When it becomes the norm, we won’t have a competitive advantage, so the trick is to get in there first, but without the funding it isn’t going to happen. But it could be really good for the city. But the trick is getting in there beforehand to get that competitive advantage”. • P7: “Implementing AR would set the city ahead of the crowd. Becoming more technologically advanced as a city is what we need to do”. • P3: “Implementing AR and VR into the destination offerings has the power to differentiate, however, I think it is difficult, because if other destinations are using it, it is a case of how we get there first and do it a bit more distinctive. I think it is trying to stay ahead of the game. But I think it would be useful in terms of our online and social media, I think it would attract attention which is good. I think AR and VR would help attracting attention”.	Perceived external pressures	Competitive pressures
• P1: “The problem we face as a tourist board is getting funding, we don’t have the resources to plough money into new technologies, so we can be reliant on the private sector to fund initiatives. In the public sector, there is little money for that sort of thing. Most of our money comes from our commercial activity. We as a company would not be able to invest in technology so we would rely on other companies to invest”.	Perceived organisational capability	Funding access

• P1: “Customer demand would motivate funding for technology from private investors. If we thought it was key to improving the visitor experience, and there was something we needed to do that we had to do, we would try and find a funding source through the public sector”. • P2: “I don’t know how much an AR or VR application would be. My guess is that it would be very expensive. Our budgets are different now to how they were five years ago. Going back five years we would have EU money and funding and since the demise of the regional development agencies etc., we have turned ourselves into more of an agency. We are very much self-funding projects and campaigns so that budget for the likes of the development projects and things, I don’t know where that money would come from”. • P4: “I think potentially VR could be useful for marketing, however, I think it will come down to cost”. • P7: “It costs quite a lot of money to implement applications and AR features, but we were considering investing in that area for WeChat. There is potential definitely”.		
• P4: “I think VR could be something useful, but it depends on how easily available it is to produce, and the technical side of the content, and distribute it”. • P7: “I see potential for VR but the hurdles that we have come across is how do we use it. Because we have seen other travel organisations using it, Visit Maldives, but they put it into travel agents and they put VR headsets into travel agents, so the potential tourists can preview the destinations. So, we are challenged by implementing something like that and which platform to use because we are relying on our markets to have VR headsets. We are unsure of how to implement it and we need to do further research”. • P7: “I see less potential for AR as I do not know how we would utilize it and what platform we would use”.	Perceived organisational capability	Organisational readiness
• P3: “Regarding investment, I think it would be worth the investment, however, I am not aware of the cost. If it wasn’t massively expensive I think it would definitely be worth it”. • P5: “The main challenges are the cost, because the costs are quite high, you have really got to evaluate the commercial return that you are going to get…I think it is about evaluating the commercial return, so there would need to be an incentive to purchase something/access promotions on the application for shops to be motivated to get on board”. • P7: “I think AR and VR would have to be a huge investment, but I don’t know what the numbers would be in terms of increasing visitor number, so it would have to be a trial run depending on the response we get. It would be hard to measure. CityCo are in control of the BID and analyse footfall etc.”. • P2: “But as a leading and developing city break destination, we have got to keep up with technology, so I think it is definitely worth looking into to see what the options are for example, how much it would be in the present time we would have to look at how we can develop something”.	Perceived organisational capability	Return on investment

(Source: Authors own)

12.10.2 Visitor Interview Data

Table 12.6. Thematic Table: Visitor Interview Data

Data extract (examples)	Initial code > 2nd/3rd phase of review codes	Final sub-themes
• P11: "It's quite nice when you are on the beaches and stuff to have music because you are on the beach. But when you're in the markets and the malls and stuff it's nice to have someone explaining where you are and what's there…I think natural sounds as well". • P2: "The sounds where very relevant to the culture with it being in Dubai. The sounds were good, it didn't seem to be off putting. I did enjoy them, it added to the whole experience in the environment". • P6: "I kind of like the traditional music. It gave me a feeling like I was in that environment, in that country".	Atmospherics > Music	Virtual atmospherics
• P1: "People on the first one. Could hear a lot more on the first one than the second one. The second one seemed a bit limited. Because I just went into one place…I preferred the commentary. It was a guide to what's going on, where am I going, without having to think about it. It gave more information". • P11: "I liked having the person in the background telling me what's what and what I am looking at because I wouldn't have a clue otherwise". • P8: "I thought it was good and helped the whole experience. I felt like I was being guided around the place as opposed to just aimlessly being there". • P12: "Commentary's cool. Like you said, if you go in a travel agents then pre-recorded commentary throughout it all explaining it would be good, but in between the gaps of it still being silent, get a bit of the natural noises going on in there". • P2: "I did like the commentary, only because I have not been to the destination. I feel that if I had been to the destination then it would be a bit more, like I wouldn't need to hear it. But I feel that for a person visiting a new destination then it would be very helpful. I did feel like I was on an actual virtual tour of the place. It really did give me a feel for the destination". • P7: "I enjoyed that because I wouldn't have known what each thing was if that wasn't there…because she kind of talked you through the different locations that you were seeing. Whereas you kind of get lost in it [the information] when it's on a computer screen. Like you are flicking from one page to the other, whereas [in VR], you are acknowledging what she was talking about because you felt like you were in it and you were doing it at the time". • P4: "It was informing you of all the places and what's there. I would prefer to hear the information because it's more helpful".	Atmospherics > Commentary	Virtual atmospherics
• P12: "I thought you should have had the natural sounds of what is going on there as well. I mean you could have done, but I could not hear it". • P3: "Yes there was a nice ambient crowd in the background that you would find in a shopping mall. So ambient shopping mall sound. For example, if you were on editing software and you were making a film, you wouldn't question that that would be the ambient mall sound. That would make the experience a lot more realistic". • P5: "I did hear the sound effects and the fireworks a little bit, but I found that when it was showing a lot of water, I couldn't hear many sound effects I could just hear the commentary. I would have preferred more sound effects to make it a bit more real. Louder and clearer sounds would make me feel like I was there more than I did. The traditional music was not bad. But I think still more sound effects". • P7: "I like the natural sounds of like the water and stuff in the first video. In the other one I thought it was overpowered by the music that was being played".	Atmospherics > Natural sounds	Virtual atmospherics
• P4: "It was the whole experience on the headset. The destination stood out. I've never been to the destination. I think this would give me a rounded view of it, things I have not seen before".	Atmospherics > Sounds and visuals	Virtual atmospherics

• P4: “In the first one, the experience was actually like being there, and you were taken in by the sounds as well as what you saw. The second one, I did not notice any sounds. It was more of a viewing experience, where your searching for something you may need”. • P4: “When it gets more advanced it could even include smells, so if someone in VR pushes flowers up to your face and at the same time the smell of flowers is released that would make it more real. Or if you could smell the sea air when the sea comes on, or feel cold when looking at the Arctic, or heat on your face when you see Dubai, then I would feel more present. Temperature controlled isn’t it, that would add to the experience”.	combined (multisensory)	
• P2: “I would say I definitely felt more present in the first one because in some of the destinations where we were, we were in a bar on the beach for example, and there were people sat around having some drinks and with the waves, there was real sounds. Whereas in the mall, it was pretty much the mall sounds (music), and the shop and that’s it. So, I did feel more present in the first one, with the virtual tour”. • P11: “If you had some amazing speakers or headphones that sat on your head and made it feel completely real but then it also changes it as well because you would always walk around with headphones on, so it depends on the person”. • P12: “It would be dependent on the person. Because they still want to have that feeling of actually being in the real world”.	Atmospherics > Impact on presence	Virtual atmospherics
• P3: “Personally, because I am into nature I would have liked a Desert shot, maybe incorporate drone footage into the VR. If you got drone footage into VR, then I think you are reaching the next sector of where you could go with the product and how you could market it”. • P1: “Probably a bit more of the city, more of the ins and outs, the backstreets, the little areas where people live, what’s going on, not just the bigger picture and the shopping experience. More traditional and local markets [not just main tourist attractions], transport links and so on”. • P4: “VR is more trustworthy than just looking at brochures that have photo shopped images. It would be good if you could access a VR live cam of a shopping destination, to check the weather and the atmosphere before you go”. • P10: “I thought it was good. I think maybe if you had erm…like control over what destinations you viewed you know, whether you are able to I am not sure, but that would be useful because obviously you have certain places that you would want to see…but then again it defeats the purpose of then going to the destination if you can look at every single little thing in there [VR]. You need just a taster”.	Atmospherics > Additional features/content	Virtual aesthetics
• P5: “For me, it felt real but then I looked up at the lights and I could tell the lights weren’t real, and also the thermostats. I think it could have been more real…I would if that could be a possible thing to do, to see other destinations not just one. With improved graphics and more sound effects it would be good. It has definitely got potential to be used for that purpose. It is just like using the internet isn’t it, but on a more immersive scale”. • P2: “It’s just a completely different dimension and way of looking at things. What you see on the internet is a few pictures, and then just a lot of text heavy stuff. But [in VR] you are fully immersed in it, and you can see for yourself what the environment is going to be like, rather than trying to make use of it you know just from a few pictures that are always taken at certain specific angles. But yeah I think it’s just a completely new dimension”. • P11: “I preferred the one where you were sort of stood there and you look around, you are in your own bubble. You feel like you are there, but it still leaves stuff to the imagination for when you get there…I liked having just a taster of it and then, yes”. • P10: “I think that maybe the real footage is more realistic because you actually feel like you are there...but to be honest the graphics of the simulation one was, yes, you wouldn’t necessarily be able to tell [that it is computerised]”. • P2: “I feel it would be a lot more useful if it was to progress, definitely keep it with the actual images of the destination rather than the digital renders of it. I think it was used with the 360-degree tour, it felt like I was actually there rather than in some sort of virtual computer world”. • P7: “I felt like the first one was a bit more realistic. I enjoyed seeing the fountain because it felt really real. Whereas the other one was kind of like you are looking on Google Maps…it was kind of like being on a computer screen”. • P4: “Say you are watching on TV, it doesn’t have the same effect. You are not taking part with [TV], whereas with VR, you feel like you are taking part in the whole experience”.	Atmospherics > Graphics/images impact on presence	Virtual aesthetics

• P2: “I enjoyed seeing all the shops and seeing how they look in real life without really being there. I think that is a cool factor of the technologies…I think it is very useful and the actual technology has a lot of potential. I just feel that the first virtual tour, that was a video from the destination, whereas the second one was more digital renders of the actual shop that had been made on a computer”. • P8: “it’s definitely a useful tool for getting an immersive feel for the place before actually having to go there. I think the more advanced VR gets, the more informative it will be”. • P9: “Seeing what you could go and see. Like a little glimpse of what you would experience if you went there...the most beautiful parts of it isn’t it really that it shows you”. • P12: “I did like it…but I wouldn’t use it to go and look around the destination of a holiday destination that I want to go. I would use it to go shopping and to see if they had the stuff that I wanted, or to have a glance in the shop before. But I wouldn’t use it if I was going looking for somewhere to go only holiday because I wouldn’t want it to ruin it. Because I want the full surprise experience when I get there, rather than feeling like I have been there already, but I have not been there. Do you know what I mean?” • P9: “Yes, because you go to some places where you don’t just want to look at shopping malls because you can get that everywhere can’t you? You would want to look at more local things, get a wide range of what it actually has to offer”. • P1: “I enjoy the Bird’s Eye view of things, looking down…I am scared of heights and I think this could work with curing that. Can I try another city?” • P11: “I found it quite useful because I didn’t think too much about it, but now knowing there is all the beautiful buildings that you see on the internet, but then there is still the little market streets and markets that you don’t get to see because they don’t put that on the internet as a thing. But that to me is still appealing…not just see like massive flashy malls and stuff, it’s nice to see diverse areas”.	Atmospherics > Providing insights into the destination	Virtual aesthetics
• P4: “It wasn’t that bad. If you could zoom into the individual item, you might want to view that would be good”. • P4: “Being able to go close up and inspect the goods, maybe if you could pick up products, have a look at them, and become part of the whole thing. The more you could become part of it, speaking to people and asking questions, handling the merchandise, the better it would be”. • P5: “Even the products on the shelves and stuff, it wasn’t bad, I just wish I could have seen them closer up and inspect them”. • P12: “Plus, if you are going down that route like picking stuff up, you would have to get them interactive gloves, wouldn’t you? And then if you are looking at putting this stuff into the household then you are going into expensive stuff really aren’t you, to get the full kit just to view something in VR that you can view online for free”.	Design factors > Interaction with products	Interactivity
• P3: “It is just basically taking it from 2D to 3D really isn’t it…you can look on a website and you have got your 2D pictures, the photographer if he is good might be able to give a few more dimensions to it but really it is not like having a 360 view as if you are there. You are not going to get that on a website really are you”. • P3: “Moving around you could have a lot of additional features with moving around, so you could have like on PlayStation remotes, vibrations to go with sounds. So, if a car goes past, it actually vibrates your temples and your senses more, so you can have more high-quality speakers”.	Design factors > Interaction with VR environment	Interactivity
• P2: “I think some sort of virtual avatar would be a lot better because it did sort of feel like it was an apocalyptic scene with no one else being there in the mall whatsoever…a digital assistant behind the counter and then a few people browsing. It would just make it feel like a worldlier experience”. • P5: “Interacting with others, rather than being isolated on your own…looking around it actually felt like people were looking at you. It almost felt like you could interact with the people in the video. [interacting with people] would be a good element to it. Especially in the Body Shop maybe have a shop assistant coming up to you or something like that. It would be more like the real-world atmosphere”. • P5: “I would have liked to interact a bit more…if I was to buy something, I would prefer a virtual assistant to just check out with”.	Social factors > Prefer to interact with virtual avatar	Social presence
• P2: “For example, if everyone had their own VR headset and you could invite someone to come virtual shopping with you and you could walk around or teleport around these malls without having to leave your home. So, say me and my friends could go shopping in Dubai mall without having to actually go there”.	Social factors > Prefer to interact with friends and family	Social presence

• P4: “Even if your friends and family are on holiday and you could chat with them through the VR headset and see where they are in 360-degree”. • P5: “It would be good though if you could speak to someone else in virtual reality, like my mates”. • P12: “Obviously if you are going with somebody the dual experience would be better for the pair of you because you would be doing it together”. • P11: “And you could sort like point stuff out to each other whilst you are both looking. Because the clips like they move on don’t they, you only get a certain second so say if one of you sees something and the other doesn’t, because they are looking in the opposite direction…”.		
• P7: “That would be a good idea because you would be able to share it…I enjoyed [360-degree experience]. You felt like you were included in it”. • P9: “I was like going to fully engage with these people even though I knew that I couldn’t. That would be pretty cool”. • P1: “On the first one, you felt like you were there with that one. Like you were part of it, that you could talk to people, and like they were looking at you”. • P2: “It is always nice to have a bit of an atmosphere, rather than having no one around whatsoever”. • P2: “No. just going back to what we were saying, I think it would be a more real-world environment if there was a bit more interaction. I don’t know if that would be with a virtual avatar or other people using VR through the internet or something. But if you could actually interact with shop assistants and there were other shoppers around in the environment, I just think it would be a more real-world scenario”. • P7: “With the first one I felt definitely like I was there. It was so real. It felt like people were looking at you and kind of like acknowledging your presence. But with the other one, no. It just felt like I was looking at a computer screen”.	Social factors > Increased presence	Social presence
• P2: “I thought it was really good. I like the way you could navigate around the shop and it was not just stationary, I could look around, because it did really feel like I was there…found it very easy you just had to focus on the arrows and it would move for you…I could easily navigate, it was pretty straight forward”. • P3: “The virtual store was organised very well. If it was physically manifested in front of me I would not question it to be a real store. So, the layout of the store was very acceptable, it would not be questionable. I would not be like “who designed this?”. It was very realistic and well proportioned…I felt comfortable and I could get around the surroundings quite easily. Like I say, everything was to scale and proportionate”. • P4: “The second one was like I was shopping, like viewing a movable catalogue…I thought moving around it was alright really. It could have been more signposted”.	Design factors > Perceived ease of layout	Layout design
• P1: “I found that one hard to go in and out of. The first one was easier because I could look around more and focus…it was quite challenging”.	Design factors > Difficulty with layout design	Layout design
• P1: “I just think it would be easier if you could walk into it, rather than rush into it, and could take your time looking around. It would make the experience feel more natural. It was very difficult to focus on the arrows…it would be like using Google Street view, you would be straight down it”. • P3: “If I was talking about navigating around the shops, so in certain cities you will have like footprints marked on the floor, or you could have a suggested barrier. So, you could have a barrier around certain bits to navigate you around the shop in a certain manner. That is all I could suggest really. Apart from the obvious which is signs”. • P3: “I like the idea of focusing in on the areas, but when you have actually focused in and centred yourself in the position and the composition of what you are looking at, and you are directly in line with the arrow, if it could illuminate a colour, or it goes into focus like on a camera when you get it into focus the arrow goes into focus, and you see some engagement of it like going green, or you see a white line going round it and it disappears because you are going in the direction. And then the next thing comes up on where to navigate, like where to look”.	Design factors > Suggestions for improvement	Layout design

• P6: “I totally felt like it was real. It almost felt as if I was in a shop in Manchester, in the Body Shop. It felt like the layout was all the same…I suppose the mechanics of it was pretty straightforward. I felt like it was user-friendly. You can just look at the arrows and see where to go. I found that experience quite easy to use”.	Design factors > Impact on presence	Layout design
• P2: “I thought it was quite easy to use anyway. I’ve seen some things with PlayStation and VR, where you put the headset on and move with the controllers. It might be easier if you had some sort of joystick to move around with. Rather than trying to focus on [the arrows] for a certain amount of time, but apart from that I found everything very easy and straightforward”. • P3: “It was very use friendly. I felt completely at ease with the device. I was having no issues such as migraines and what not, and I think this sort of product could go far in the tech sales industry”. • P12: “[Navigating] I thought it was pretty easy. Erm…the graphics in the shop were good enough, highly believable…other than the focusing, the quality of the video, could get that HD”.	Usability > Easy to use	Usability
• P1: “[the 360-degree video] was really good it was just too fast, it skipped through, compared to the other…it was all a bit blurred for me. I had trouble with getting the focus right”. • P12: “The quality as well. I couldn’t work out the focus thing…” • P4: “The sharpness because it might be sharp for other people but with my eyesight it wasn’t. You should be able to adjust it more to suit your vision… I would prefer the application to be included in the headset (rather than inserting the phone) and be able to download other applications (e.g. movies), and also to be able to focus in within the app (did not like using the reel on top of the headset)”. • P5: “In years when VR becomes more cost effective and better improved quality, the headset is more lightweight, and I can just slip it on like a sleeping mask, then I would definitely would go to it. But not as it is”.	Usability > Difficult to use	Usability
• P3: “Additional information on how to improve the product in the tech sales industry, it needs USB ports that can connect [VR] to a projector. Or better still, Bluetooth applications so you can do more stuff. So, it needs a better focal range, it needs ISO capabilities to alter the ISO. We also want to be able to have a recording device, so you can actually record while you’re on sight, that can also have a shutter speed application, so you can adjust the shutter speed. It wants 4K capabilities, so it can link to a 4K projector, higher resolution, with HD online port/HD1 port, and all other types of ports so you can do all other stuff. The ability to zoom in”. • P5: “I think the headset could be made a lot more comfortable, and the straps more adjustable. For it to be lighter. It was an enjoyable experience”.	Usability > Suggestions for improvement	Usability
• P6: “It was so immersive that it almost made me feel nauseous. I think at first, I was comfortable with it, until certain points where you are either high up. I think at one point you are at the top of the Burj Khalifa looking down and that was quite a nauseous feeling”. • P11: “See that height thing, that could throw people off because you do look straight down. Literally I was like looking down, I’m alright with heights but that might make you feel a bit off”. • P11: “I think it would stress me out a bit. If someone was talking at me and I didn’t know what they were saying”. • P11: “I think there is a point where you are in a boat, and if you are sea sick, someone who gets really bad sea sick, then that might be an issue, but it didn’t feel like you are rocking about”. • P7: “I can imagine older people might be a bit jumpy”.	Potential negative emotions > Emotional response	Emotional arousal
• P1: “It was exciting, and it is new for me”. • P11: “It was quite nice because if you don’t like going these places and if your using this but in your living room, it’s also quite nice”. • P11: “Because it did start off at a really high building didn’t it and you are looking down”. • P3: “It was an enjoyed experience”. • P5: “It is similar in ways, it is more fun. But at this moment in time I would prefer to use the internet”.	Positive emotions > Emotional response	Emotional arousal

• P2: “I think it would be more of a real sort of feel. Maybe make me feel a lot more relaxed and not like I was in an isolated environment”. • P2: “It would be good, if you were to be shopping in your own home then it would be good to have a choice of your own music that you want to listen to from your own playlist, playing in the background to make you feel more at home and more relaxed”.		
• P1: “Very. It would be the first thing I would use now [to search for cities to visit] if it was available to me. You get more information and more of a feel for a place before you went there, so you feel like you’ve been there, and it would make your visit more enjoyable when you actually go”. • P2: “It would definitely influence perceptions of the new place, because like I said you feel like you are actually in the environment rather than sort of making a mental picture of it from the information you read”. • P6: “I think if a new shop is opening and they give out this experience to new customers who already know the layout of the shopping centre and things like that, so they actually know where to go and the products they actually want, I think that’s quite a good idea…it’s far beyond the experiences I have had when researching into destinations and stuff like that. It is a new thing”. • P2: “It is very interesting because sometimes when you hear about certain shops in the destination, you never really know if it is going to be a small shop or a large shop, or anything like that. so, it was good to get a feel of what the shops will be like before actually visiting the mall”.	Perceptions (of VR and places viewed in VR) > Attitude change	Attitude
• P1: “What like I would use it all the time? [Dubai] was different to what I thought. I felt like I seen more of it. Like when you look on the internet or in a brochure, I felt like I was there and had a more open view of it”. • P2: “It definitely gave me a taste of the destination before actually going there, so it is very useful in that sort of aspect of giving you a bit of a taster before you actually go. Because I do feel like I know it a tiny bit now just from doing the tour”. • P10: “Definitely. When you think of Dubai I expected it to be simplistic almost, and not very much character because it is like really well-built and modern. But then seeing the local markets and things you see obviously a different side of it that I wouldn’t have envisioned before”. • P7: “Erm, yes. It seemed like there was a lot more going on than I would have presumed and more than I probably would have found on the internet. Like I probably wouldn’t have found any of that [information]. Whereas it was all just there straight away”.	Change of perceptions attitude (towards VR and places viewed in VR) > Attitude change	Attitude
• P1: “Most definitely! Because you got to see more, the bigger picture. Like I said, the only way I can interpret it is going on Google Street view and then you know where you are going. Then when you are there it would make the whole experience a lot better and more comfortable”. • P11: “I would because I would want to see what’s there. Rather than getting there and not having a clue where this and that is. Like if you go sort of flea markets, if you saw that, you would then know to go and look for it. Whereas if I just arrived I wouldn’t know to go and look for it” • P4: “I would definitely use it because it would give you an insight into where you are going and what to do when you get there, and it gives a lot of information”. • P9: “It’s a much better method of comparing destinations”. • P1: “It influenced me a lot. It is something I will take on board [using VR for this purpose]”. • P5: “I think at the minute I would always just go to the internet because I can’t see it as an advantage. The internet is just a lot easier go-to…personally, I would rather just turn up and find my way around, but it would be a really good idea and useful for someone who is scared of going new places and things like that and would rather map something out before they go”. • P6: “I would say the experience is a lot more like it felt a lot more real. Say if I was doing research into the place I would kind of like them VR tours to try because it gives you a better feeling of the environment”. • P7: “If you could get discounts and stuff then you would probably switch to that”. • P9: “You could even have like pop-up stalls around, like in marketplaces or in shops or pop-up shops just to test it out and see people think”. • P10: “Does it almost not take you away from the experience a little bit for when you get there...obviously it will be very different when you get there, and you are experiencing it properly, but it would take a little bit of a it away, because you see the hustle and bustle of somewhere”.	Intent to use VR again	Behavioural intentions

• P9: "If it had all the things online has to offer like erm, looking around places, different hotels etc. then it would be ten million times better and it would be your main go-to thing of looking at holiday destinations. It would be mine if it had all that".		
• P2: "Yes, I definitely would. I think this sort of technology is cutting edge and where the future is heading". • P3: "Yes. I think it is definitely something I would recommend to others. For example, if I did find a shop that you know, I would not have normally noticed, I just casually browse in and out of ones I know, and then yeah, the product would be recommended". • P5: "Yes, I definitely would recommend it to others because it's something new". • P6: "I would recommend it yes". • P7: "It's a new experience isn't it. And it's a lot better than just sitting there". • P2: "I mean I think it was really good. I think it has got great potential as well especially with shops getting busy and overcrowded at peak times. I could see a lot of people using this technology because they could sit at home…from the comfort of their own home they could do some shopping". • P4: "If it is affordable, and if it improved any more than it has, I think it would catch on and become a good thing".	Intent to recommend VR to others	Behavioural intentions
• P1: "If it was in Thomas Cook I would definitely be more likely to buy the holiday, they would sell it to me without a doubt. With a brochure I am more likely to take it home, have a think on it, and then probably go off the idea…I would definitely do my food shopping in there, and definitely be tempted to buy a holiday". • P12: "That would motivate me to go there. But I am not sure I would start buying clothes over it. I don't know I might do it is just hard with clothes" • P11: "Yes, but say if it was like say some face cream, would you be able to go to the counter in the headset and pay for it? Or would you be able to like browse [in VR] and then it sends you to the website or something?" • P11: "If you do end up being able to buy stuff I mean supermarkets would be a good one. Stuff like if you were watching a catwalk through it and you could see the shop or buy the clothes from it". • P2: "Yes, it would just be like a new dimension of online shopping really wouldn't it, but it is more like you are actually going there". • P9: "That would be good! If you see something that looks really cool and you are like "I want to go there", and if it gives you the option to buy a ticket". • P4: "Yes, and perhaps influence your decision on going to some places…you could easily see 18-30 holidays in VR. If the young ones put the headset on and they are in a nightclub that would definitely get them to visit". • P1: "Possibly if I am looking for bargains, for restaurants that are value for money"	Intent to purchase	Behavioural intentions
• P2: "Well, did not know what to expect but it looked amazing and it definitely, like, encouraged me to go. You know from seeing the virtual tour. Because it's never been a place that I have considered. But now after seeing it and seeing all the amazing architecture, I really would be interested in visiting" • P3: "Yes it could definitely broaden my horizons. For example, just like in real-life if I saw an advert or I drove past a shop that caught my interest, if a shop caught my interest in VR it would then maybe inspire me to go there in real-life. So, as a tool of advertisement I would say that this could be a good product". • P4: "It would, because you would get a better idea of what it is actually like wouldn't you, in the VR, you would be able to see it a lot better and experience it a bit before you go". • P10: "Maybe if like travel companies used it, so to say if you were exploring different places to go and they gave you it as an option to kind of view places that would encourage you to use it". • P1: "It would help to plan the trip before you go and then it is all taken care of when you get there".	Intent to visit places featured in VR	Behavioural intentions

(Source: Authors own)

12.11 Appendix K: Survey Consent Form

28th January 2019

Participant Consent Form

Title of Project: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

Name of Researcher: Natasha Moorhouse

By agreeing to take part in this study I can confirm the following:

1. I am fully aware of the potential risks and side effects of taking part in this study.

2. I can confirm that I do not have any known or pre-existing illness or medical conditions including flu, ear infection, hangover, sleep loss, or epilepsy.

3. I am not taking any medication that could affect visual or vestibular function.

4. I agree to take part in the above research project that involves the testing of a VR shopping application.

_____ _____ _____
Signature Date Participant

_____ _____ _____
Researcher Signature Date Researcher

To be signed and dated in presence of the participant

12.11.1 Example of Completed Survey Consent Form

(1)

Manchester Metropolitan University

28th January 2019

Participant Consent Form

Title of Project: Investigating Visitors' Behavioural Response to Immersive Technology Retail Environments

Name of Researcher: Natasha Moorhouse

By agreeing to take part in this study I can confirm the following:

1. I am fully aware of the potential risks and side effects of taking part in this study.
2. I can confirm that I do not have any known or pre-existing illness or medical conditions including flu, ear infection, hangover, sleep loss, or epilepsy.
3. I am not taking any medication that could affect visual or vestibular function.
4. I agree to take part in the above research project that involves the testing of a VR shopping application.

18.02.19 — Date

Participant Signature

Natasha Moorhouse — Researcher

18/2/19 — Date

Researcher Signature

To be signed and dated in presence of the participant

12.12 Appendix L. Pilot Survey

12.12.1 Pilot Test Checklist

How long do the VR applications take to experience?	90 seconds – 2 minutes
How long does the survey take to complete?	5-10 minutes
How long does it take to experience VR and complete the survey?	10-15 minutes
Did the time to complete the survey vary widely among the test participants?	No
Are the instructions for each section clear and unambiguous?	X
Do the different sections flow reasonable from one to the next?	X
Are all questions necessary in order to collect information on the topic?	X
Are the questions within each section logically ordered?	X
Are the questions direct and concise?	X
Are the questions measuring what they are intended to measure?	X
Are the questions free of unnecessary technical language and jargon?	X
Are examples and analogies relevant for individuals of other cultures?	X
Are questions unbiased?	X
Are there questions that make respondents feel uncomfortable, embarrassed, annoyed, or confused? If so, can these be worded differently to avoid doing so?	X
Are the response choices mutually exclusive and exhaustive?	X
Are all response options necessary for inclusion?	X

(Source: Adapted from Ruel et al., 2015)

12.12.2 Pilot Test Plan

Record length of time taken to recruit one participant, ten participants, and twenty participants (to calculate the time required for larger study).	Varied depending on situation
Invite participant to take part in the study including the testing of a VR retail application and a short survey.	X
Once participant is recruited, start timer and provide further explanation on the purpose of the project.	X
Brief participants on the ethical information including anonymity and confidentiality. Ensure they have no existing medical conditions and invite them to thoroughly read, complete, and sign participant consent form.	X
Check ethics form is signed before proceeding and record time taken to complete this step. Re-start the timer to record the time for the VR experience.	X
Brief the participant on the VR shopping application and using the VR headset. Inform the participant that if they feel any discomfort, inform the researcher immediately and the headset will be removed.	X
Once participant has experienced the VR retail application, check they are OK and invite him/her to complete the survey. Stop the timer and re-start to record the time taken to complete the survey.	X
Check the survey has been completed fully and stop the timer.	X
Thank the participant for taking the time to participate in the study.	X
Repeat the process until 20-30 responses have been collected.	X

(Source: Authors own)

12.12.3 Pilot Survey Changes to Questions

Changes to survey from pilot study to main survey data collection:

- Interactivity question reworded into two
- Order of questions (first part) for data input purposes
- Annual pre-tax income – inserted option “prefer not to say”
- Eliminate visitor type i.e. I am a: tourist, resident, day visitor

12.13 Appendix M: Survey Questions

Manchester Metropolitan University

Visitors' Response to Virtual Reality (VR)

Retail Environments

Thank you for agreeing to participate in this study, which explores visitors' response to Virtual Reality (VR) retail environments. Based on the VR shopping application you have just experienced, please indicate the extent to which you agree with each statement using the rating scale (1 = strongly disagree and 7 = strongly agree). **Please circle the number accordingly.**

In my eyes, the VR shopping experience was:								
Unattractive	1	2	3	4	5	6	7	Attractive
Dull	1	2	3	4	5	6	7	Bright
Unlively	1	2	3	4	5	6	7	Lively
Boring	1	2	3	4	5	6	7	Stimulating
Unexciting	1	2	3	4	5	6	7	Exciting
Monotonous	1	2	3	4	5	6	7	Fascinating
Conventional	1	2	3	4	5	6	7	Creative
Unremarkable	1	2	3	4	5	6	7	Impressive
Unhelpful signage	1	2	3	4	5	6	7	Helpful signage
Difficult to navigate	1	2	3	4	5	6	7	Easy to navigate
Unorganised layout	1	2	3	4	5	6	7	Well organised layout

To what extent do you agree with the following statements *(please circle accordingly)*:	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
The aesthetics of the VR shopping application promotes a perception of quality.	1	2	3	4	5	6	7
The look and feel of the virtual shopping environment are important when using VR to shop.	1	2	3	4	5	6	7
The VR shopping application has a high degree of interactivity.	1	2	3	4	5	6	7
I can interact with the VR shopping application in order to get information tailored to my specific needs.	1	2	3	4	5	6	7
The interactivity functions allow me to customise content.	1	2	3	4	5	6	7
The interactivity functions can satisfy my requirements.	1	2	3	4	5	6	7
The VR shopping application has interactive features, which help me accomplish my task.	1	2	3	4	5	6	7
I would prefer if there was a sense of sociability in the VR shopping application.	1	2	3	4	5	6	7

Using the VR shopping application to interact with others would create a sociable environment for shopping.	1	2	3	4	5	6	7
Using the VR shopping application to interact with others would create a personal environment for shopping.	1	2	3	4	5	6	7
Using the VR shopping application to interact with others would create a warm environment for shopping.	1	2	3	4	5	6	7

Using the rating scale below, indicate your attitude toward the VR shopping application *(please circle accordingly):*								
Negative	1	2	3	4	5	6	7	Positive
Unfavourable	1	2	3	4	5	6	7	Favourable
Uninteresting	1	2	3	4	5	6	7	Interesting
Unpleasant	1	2	3	4	5	6	7	Pleasant

To what extent do you agree with the following statements *(please circle accordingly)***:**	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
I thought the VR shopping application was easy to use.	1	2	3	4	5	6	7
I felt confident using the VR shopping application.	1	2	3	4	5	6	7
I found the VR shopping application very awkward to use.	1	2	3	4	5	6	7
I needed to learn a lot of things before I could get going with the VR shopping application.	1	2	3	4	5	6	7
I would imagine that most people would learn to use the VR shopping application very quickly.	1	2	3	4	5	6	7

To what extent do you agree with the following statements *(please circle accordingly):*	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
After experiencing the VR shopping application, I felt like I came back to the "real world" after a journey.	1	2	3	4	5	6	7
The VR shopping experience created a new world for me.	1	2	3	4	5	6	7
The virtual world suddenly disappeared when I took off the VR headset.	1	2	3	4	5	6	7
While I was experiencing the VR shopping application, I felt like I was in the shop.	1	2	3	4	5	6	7

While I was experiencing the VR shopping application, I sometimes forgot that I was in the middle of an experiment.	1	2	3	4	5	6	7
While I was experiencing the VR shopping application, my body was in the room, but my mind was inside the virtual world.	1	2	3	4	5	6	7
I enjoy playing tennis.	1	2	3	4	5	6	7

Please indicate the feelings you had when using the VR shopping application *(please circle accordingly, 1 = no feelings, 7 = intense feelings)***:**

	No feelings						**Intense feelings**
Amusement	1	2	3	4	5	6	7
Interest	1	2	3	4	5	6	7
Contentment	1	2	3	4	5	6	7
Joy	1	2	3	4	5	6	7
Delight	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7
Anxious	1	2	3	4	5	6	7
Fear	1	2	3	4	5	6	7
Anger	1	2	3	4	5	6	7
Distress	1	2	3	4	5	6	7

To what extent do you agree with the following statements *(please circle accordingly)***:**	**Strongly disagree**			**Neutral**			**Strongly agree**
I gained an interest in actually visiting in person the shopping destination viewed in VR.	1	2	3	4	5	6	7
I intend to visit the places featured in VR.	1	2	3	4	5	6	7
I want to try to visit the shopping destination viewed in VR in the future.	1	2	3	4	5	6	7
I am willing to recommend this VR shopping application.	1	2	3	4	5	6	7
I will encourage friends and family to use the VR shopping application.	1	2	3	4	5	6	7
If asked, I will say positive things about the VR shopping application.	1	2	3	4	5	6	7
Assuming I have access to the VR shopping application, I intend to use it.	1	2	3	4	5	6	7
I will return to the VR shopping application the next time I need a high-tech product.	1	2	3	4	5	6	7
It is very likely I will return to using VR for shopping.	1	2	3	4	5	6	7
I intend to purchase through VR shopping applications in the near future.	1	2	3	4	5	6	7

It is likely I will purchase through VR shopping applications in the near future.	1	2	3	4	5	6	7
My willingness to buy through VR shopping applications is high.	1	2	3	4	5	6	7

Pease circle accordingly:							
Have you used VR before?	Yes	No					
Age:	18-21	22-34	35-44	45-54	55-64	65+	Prefer not to say
Gender you identify as:	Male	Female	Prefer not to say				
Occupation:	Employed	Self-employed	Unemployed	Student	Retired	Prefer not to say	
Annual pre-tax income:	Less than £10,000	£10,000 – £29,000	£30,000 - £49,000	£50,000 - £69,000	More than £70,000	Prefer not to say	

Country of origin *(please state)***:** **Signature: ……**

Thank you for taking the time to participate in this study.

12.13.1 Example of Completed Survey

Manchester Metropolitan University

Visitors' Response to Virtual Reality (VR) Retail Environments

Thank you for agreeing to participate in this study, which explores visitors' response to Virtual Reality (VR) retail environments. Based on the VR shopping application you have just experienced, please indicate the extent to which you agree with each statement using the rating scale (1 = strongly disagree and 7 = strongly agree). **Please circle the number accordingly.**

In my eyes, the VR shopping experience was:								
Unattractive	(1)	2	3	4	5	6	7	Attractive
Dull	1	2	3	(4)	5	6	7	Bright
Unlively	1	2	(3)	4	5	6	7	Lively
Boring	(1)	2	3	4	5	6	7	Stimulating
Unexciting	(1)	2	3	4	5	6	7	Exciting
Monotonous	(1)	2	3	4	5	6	7	Fascinating
Conventional	1	2	3	4	(5)	6	7	Creative
Unremarkable	1	2	3	(4)	5	6	7	Impressive
Unhelpful signage	1	2	3	(4)	5	6	7	Helpful signage
Difficult to navigate	1	2	3	4	(5)	6	7	Easy to navigate
Unorganised layout	1	2	3	4	(5)	6	7	Well organised layout

To what extent do you agree with the following statements *(please circle accordingly)*:	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
The aesthetics of the VR shopping application promotes a perception of quality.	(1)	2	3	4	5	6	7
The look and feel of the virtual shopping environment is important when using VR to shop.	1	2	3	4	5	(6)	7
The VR shopping application has a high degree of interactivity.	1	(2)	3	4	5	6	7
I can interact with the VR shopping application in order to get information tailored to my specific needs.	1	2	3	(4)	5	6	7
The interactivity functions allow me to customise content.	1	2	3	(4)	5	6	7
The interactivity functions can satisfy my requirements.	1	2	(3)	4	5	6	7
The VR shopping application has interactive features, which help me accomplish my task.	1	(2)	3	4	5	6	7
I would prefer if there was a sense of sociability in the VR shopping application.	1	2	3	(4)	5	6	7
Using the VR shopping application to interact with others would create a sociable environment for shopping.	1	2	3	(4)	5	6	7
Using the VR shopping application to interact with others would create a personal environment for shopping.	1	2	3	(4)	5	6	7
Using the VR shopping application to interact with others would create a warm environment for shopping.	1	(2)	3	4	5	6	7

Using the rating scale below, indicate your attitude toward the VR shopping application *(please circle accordingly):*							
Negative	1	2	3	4	5	6	7	Positive
Unfavourable	1	2	3	4	5	6	7	Favourable
Uninteresting	1	2	3	4	5	6	7	Interesting
Unpleasant	1	2	3	4	5	6	7	Pleasant

To what extent do you agree with the following statements *(please circle accordingly)*:	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
I thought the VR shopping application was easy to use.	1	2	3	4	5	6	7
I felt confident using the VR shopping application.	1	2	3	4	5	6	7
I found the VR shopping application very awkward to use.	1	2	3	4	5	6	7
I needed to learn a lot of things before I could get going with the VR shopping application.	1	2	3	4	5	6	7
I would imagine that most people would learn to use the VR shopping application very quickly.	1	2	3	4	5	6	7

To what extent do you agree with the following statements *(please circle accordingly)*:	**Strongly disagree**			**Neither agree nor disagree**			**Strongly agree**
After experiencing the VR shopping application, I felt like I came back to the "real world" after a journey.	1	2	3	4	5	6	7
The VR shopping experience created a new world for me.	1	2	3	4	5	6	7
The virtual world suddenly disappeared when I took off the VR headset.	1	2	3	4	5	6	7
While I was experiencing the VR shopping application, I felt like I was in the shop.	1	2	3	4	5	6	7
While I was experiencing the VR shopping application, I sometimes forgot that I was in the middle of an experiment.	1	2	3	4	5	6	7
While I was experiencing the VR shopping application, my body was in the room, but my mind was inside the virtual world.	1	2	3	4	5	6	7

Please indicate the feelings you had when using the VR shopping application *(please circle accordingly, 1 = no feelings, 7 = intense feelings)*:	**No feelings**						**Intense feelings**
Amusement	1	2	3	4	5	6	7
Interest	1	2	3	4	5	6	7
Contentment	1	2	3	4	5	6	7
Joy	1	2	3	4	5	6	7
Delight	1	2	3	4	5	6	7
Sad	1	2	3	4	5	6	7
Anxious	1	2	3	4	5	6	7
Fear	1	2	3	4	5	6	7
Anger	1	2	3	4	5	6	7
Distress	1	2	3	4	5	6	7

To what extent do you agree with the following statements *(please circle accordingly)*:	Strongly disagree			Neutral			Strongly agree
I gained an interest in actually visiting in person the shopping destination viewed in VR.	1	2	3	4	(5)	6	7
I intend to visit the places featured in VR.	1	2	3	(4)	5	6	7
I want to try to visit the shopping destination viewed in VR in the future.	1	2	3	(4)	5	6	7
I am willing to recommend this VR shopping application.	(1)	2	3	4	5	6	7
I will encourage friends and family to use the VR shopping application.	(1)	2	3	4	5	6	7
If asked, I will say positive things about the VR shopping application.	1	(2)	3	4	5	6	7
Assuming I have access to the VR shopping application, I intend to use it.	(1)	2	3	4	5	6	7
I will return to the VR shopping application the next time I need a high-tech product.	(1)	2	3	4	5	6	7
It is very likely I will return to using VR for shopping.	(1)	2	3	4	5	6	7
I intend to purchase through VR shopping applications in the near future.	(1)	2	3	4	5	6	7
It is likely I will purchase through VR shopping applications in the near future.	(1)	2	3	4	5	6	7
My willingness to buy through VR shopping applications is high.	(1)	2	3	4	5	6	7

Pease circle accordingly:							
Have you used VR before?	Yes	(No)					
Age:	18-21	22-34	35-44	(45-54)	55-64	65+	Prefer not to say
Gender you identify as:	Male	(Female)	Prefer not to say				
Occupation:	Employed	Self-employed	Unemployed	(Student)	Retired	Prefer not to say	
Annual pre-tax income:	Less than £10,000	£10,000 – £29,000	£30,000 - £49,000	£50,000 - £69,000	More than £70,000	(Prefer not to say)	

Country of origin *(please state)*: ...Russia.... **Signature:** .....

12.14 Appendix N: Constructs and Measures

Table 12.7. Constructs and Measures

Construct measures and survey items (statements/measurement scales) using 1-7 rating scale	**References**
Virtual atmospherics In my eyes, the VR shopping application was: 1. Unattractive/attractive 2. Dull/bright 3. Unlively/lively 4. Boring/stimulating 5. Exciting/unexciting	Wu et al., (2013)
Virtual aesthetics To what extent do you agree with the following statements: 1. The aesthetics of the VR shopping application promotes a perception of quality. 2. The look and feel of the virtual environment are important when viewing urban shopping destinations. In my eyes, the VR shopping application environment was: 3. Fascinating/monotonous 4. Conventional/creative 5. Impressive/unremarkable	Wang et al., (2011); Rose et al., (2012);
Interactivity To what extent do you agree with the following statements: 1. the VR shopping application has a high degree of interactivity. 2. I can interact with the VR shopping application in order to get information tailored to my specific needs. 3. The interactivity functions in the VR shopping application allow me to customise content 4. The interactivity functions in the VR shopping application can satisfy my requirements. 5. The VR shopping application has interactive features, which help me accomplish my task.	Islam and Rahman (2017); Loiacono et al., (2002) also used in Campbell & Writght (2008) Lee, Moon, Kim, and Yi, (2015) Daft and Lengel (1986) also used in Liao (2006)
Social presence To what extent do you agree with the following statements: 1. I would prefer if there was a sense of sociability in the VR shopping application. 2. Using the VR shopping application to interact with others would create a sociable environment for shopping. 3. Using the VR shopping application to interact with others would create a personal environment for shopping. 4. Using the VR shopping application to interact with others would create a warm environment for shopping.	Gefen and Straub (2003); Nair et al., (2014)
Layout design Using the rating scale below, indicate your thoughts of the VR shopping application: 1. Well organised layout/unorganized layout 2. Good displays/bad displays 3. Helpful signage/unhelpful signage 4. Easy to navigate/difficult to navigate	Wu et al., (2013)
Usability 1. I thought the VR shopping application was easy to use. 2. I felt confident using the VR shopping application. 3. I found the VR shopping application very awkward to use.	System Usability Scale (SUS)

4. I needed to learn a lot of things before I could get going with the VR shopping application. 5. I would imagine that most people would learn to use the VR shopping application very quickly.	
Presence	
To what extent do you agree with the following statements: 1. After experiencing the VR shopping application, I felt like I came back to the "real world" after a journey. 2. The VR retail experience created a new world for me 3. The virtual world suddenly disappeared when I took off the VR headset. 4. While I was experiencing the VR shopping application, I felt like I was in the shop. 5. While I was experiencing the VR shopping application, I sometimes forgot that I was in the middle of an experiment. 6. While I was experiencing the VR shopping application, my body was in the room, but my mind was inside the virtual world.	Coyle and Thorson (2001); van Kerrebroeck et al., (2017a)
Emotional arousal	
Positive emotions Using the rating scale below, indicate the feelings you had following experiencing the VR shopping application: 1. Amusement 2. Interest 3. Contentment 4. Joy 5. Delight 6. Relaxed	Huang et al., (2013); Riva et al., (2007); Izard. (1977); Rose et al., (2012); Novak, Hoffman, and Yung (2000)
Negative emotions Using the rating scale below, indicate the feelings you had following experiencing the VR shopping application: 1. Sad 2. Anxious 3. Fear 4. Anger 5. Distress	Riva et al., (2007); Izard (1977); Rose et al., (2012); Novak, Hoffman, and Yung (2000)
Attitude	
Attitude toward the destination/using VR to purchase Using the rating scale below, indicate your attitude toward the VR retail application: 1. Positive/negative 2. Favourable/unfavourable 3. Interesting/uninteresting 4. Unpleasant/pleasant	van Kerrebroeck et al., (2017a); Yim et al., (2017)
Behavioural intentions	
To what extent do you agree with the following statements: **Intent to visit** 1. I gained an interest in actually visiting in person the urban shopping destination viewed in VR. 2. I intend to visit the places featured in VR	Huang et al., (2013); Disztinger et al., (2017);

3. I want to try to visit the urban shopping destination viewed in VR in the future. **Intent to recommend** 4. I am willing to recommend this the VR shopping application. 5. I will encourage friends and family to use the VR shopping application. 6. If asked, I will say positive things about the VR shopping application. **Intent to repeat** 7. Assuming I have access to the VR shopping application, I intend to use it. 8. I will return to the VR shopping application the next time I need a high-tech product. 9. It is very likely I will return to using the VR shopping application. **Intent to purchase** 10. I intend to purchase through the VR shopping application in the near future. 11. It is likely I will purchase through the VR shopping application in the near future. 12. My willingness to buy through the VR shopping application is high.	Abarbanel et al., (2015); Choi and Kandampully (2018) Homer (1990); van Kerrebroeck et al., (2017a); Yim et al., (2017); Coyle and Thorson (2001); Yoo and Donthu (2001) also used in Ettis (2017); Dodds (1991) also used in: Prashar et al., (2017); Gao and Bai (2014)
Additional questions: 1. Previous VR usage 2. Age 3. Gender 4. Occupation 5. Country of origin 6. Visitor categorisation	

(Source: Authors own)